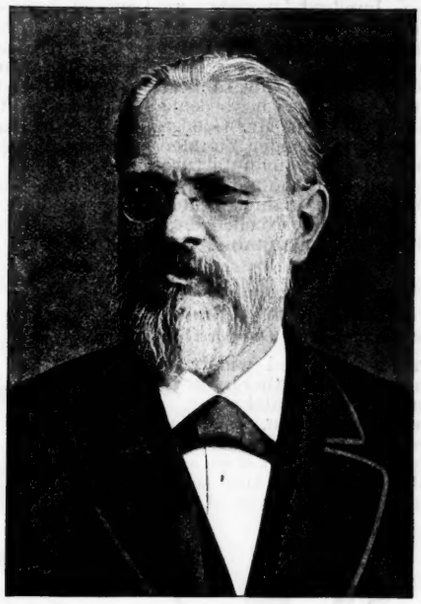
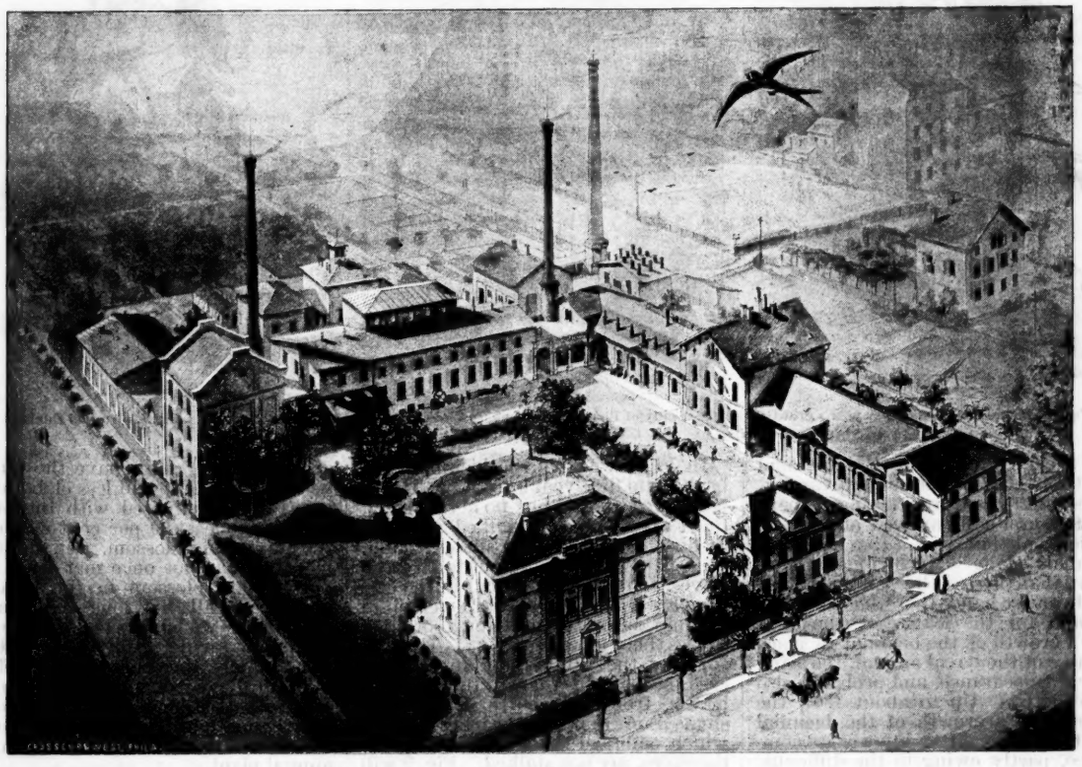
American Druggist

Vol. XIII. No. 8. NEW YORK, AUGUST, 1884. Whole No. 122.

Dr. C. Chr. Conrad Zimmer.



Dr. George Kerner.



The "Zimmer Quinine Factory" in Frankfort on the Main.

[ORIGINAL COMMUNICATION.]

THE ZIMMER QUININE FACTORY IN FRANKFORT ON THE MAIN.

THE interest which attaches to the foreign production of cinchona alkaloids, since the removal of the duty on quinine, and especially since one of the largest manufacturing firms of these salts in the United States has recently transferred a large part of their works abroad, leads us to presume that our readers will be interested in the accompanying illustrations of Conrad Zimmer's quinine works, in Frankfort on the Main. The special reason for referring here to this manufactory is the fact that one of the members of the firm of William Wood & Company, during a recent visit to Germany, was enabled, through the kindness of Dr. G. Kerner,* the chemist of the works, to visit the entire factory and see the entire process of manufacturing cinchona alkaloids and salts in all stages of the process; a favor rarely granted, we may add, on account of the value of the trade-secrets involved.

The works were founded by Conrad Zimmer, in 1837, and have for some time been noted, not only on account of their extent, but also for the excellence of their products. For the past twenty-seven years Dr. Kerner has been the active manager of the works, and he has in the mean time become well known as one of the highest authorities in quinology.

It was Dr. Kerner who first published, in 1862, an easy, practical test to ascertain the purity of commercial sulphate of quinine—an act which, coming from the manufacturer himself, is worthy of special commendation, and speaks for the confidence of the author in the quality of his commercial product. This test has maintained its reliability and correctness against numerous criticisms and is universally recognized, being also now adopted by most modern pharmacopœias, including that of the United States.

The extent of the works is but partly shown by the illustration, since much of the work is done in massive vaults beneath the surface of the ground. The firm possess extensive forests of

* Dr. George Kerner, nephew of the well-known poet Justinus Kerner, was born on April 9th, 1835, at Besigheim near Stuttgart, Wurtemberg.

cinchona trees in Java, and in addition to the bark purchased, are able to command a large supply of raw material of their own growth and extremely rich in alkaloids, some of their Java bark having yielded as much as 14% of cinchona alkaloids. The daily output of sulphate of quinine is reported to far exceed two hundred pounds, an amount which is probably not inferior to that turned out by any other European laboratory.

Since the death of Dr. C. Chr. Conrad Zimmer, in 1878, the factory has become the property of his son, Mr. George Charles Zimmer. The elder Zimmer was the pioneer in quinine manufacture in Germany, and with the aid of Dr. Kerner soon raised the quality of their product to the highest excellence, a standard which it still maintains.

HYOSCYAMUS LEAVES.

(Abstract of a paper by William Gilmour, in the *Chemist and Druggist.*)

AUTHORITIES have varied widely in their statements as to whether hyoscyamus is an annual or biennial plant.

This difference of opinion, or confusion, has been still more increased by the fact that wholesale houses and practical pharmacists of late years generally accepted the leaves of the

Fig. 2.

Fig. 1.

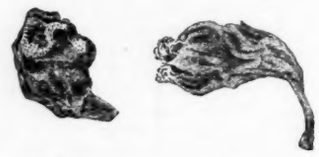


Fig. 4.

Fig. 3.

Fig. 1.—Biennial Henbane, first year's growth. Fig. 2.—Spray of Biennial Henbane, second year's growth, height, 3 to 4 feet. Fig. 3.—Annual Henbane, height, 12 to 18 inches. Fig. 4.—Dried flowering tops of Biennial Henbane with leaves.

first year's growth of the biennial plant for those of the annual variety. Observant practitioners and experimenters gradually arrived at the conviction that the leaves of the "matured biennial plant" were much more active than those of the "annual"; but on the other hand, there had arisen a demand for the leaves of the first year's growth of the biennial in place of those of the "real annual," as being finer in appearance, and probably also more active. Up to about 1864, the second year's growth of the biennial plant was but little known in commerce, partly owing to the difficulty experienced at that time in preserving the plant through the summer and winter, and partly owing to the exorbitant price in consequence demanded for it. . . . There being no flowers in the *Folia Hyoscyami* in general circulation previous to 1864 (the first year's growth of the biennial plant having no flowers), and the flowers having become a characteristic feature of the officinal plant since that period, the belief has become very common that the annual variety is destitute of flowers. . . .

In view of opinions such as these still prevailing, and more especially in view of the general confusion which has all along surrounded the henbane plant, I have thought that it might not be uninteresting to many, were I to figure the three plants referred to, namely, (1) the biennial plant first year's growth; (2) the biennial plant, second year; (3) the annual plant proper—and indicate the best means of preventing and detecting adulterations of the officinal. I am not aware that the three plants have all been figured previously in any medium accessible to pharmacists, and they are not without a special interest in view of the fact which I pointed out in the paper already referred to, namely, that no reliance can be placed on the two tests generally spoken of as distinguishing a tincture made from a true and one made from a false henbane. The spectroscope, one of the tests referred to, as I there showed, only reveals certain chlorophyll absorption bands common to all varieties of henbane; while the other test, the milky opacity of the tincture with water, is equally fallacious. The sketches are from photographs, kindly sent me by Mr. Usher, Banbury, to whom I am indebted not only for these, but also for specimens of henbane, and much valuable information.

In Fig. 1 we have the biennial henbane in its first year's growth. It will be noticed that it has no aërial stem, the leaves being all stalked and proceeding from the stem underground. This plant continues to put forth fresh leaves, to replace those cut in the earlier part of the season, until well on in autumn, when the first touch of frost causes them to wither away. The root survives the winter, and in the succeeding spring develops a tuft of small leaves, from the centre of which a stem soon appears, bearing leaves, which embrace the stem, and which, therefore, are not stalked. Fig. 2 will sufficiently show this without further explanation. Fig. 3 shows the annual plant which develops its stems and flowers in one year and then dies. When growing, no one could possibly mistake the one variety for the other. The stem (as well as the leaves and flowers) of the annual is smaller and less branching, while the leaves are also less downy, less sinuated, less clammy, and possessing less of the peculiar narcotic odor characteristic of the henbane plant. When in the dried state, most of these characteristics disappear, if not entirely, at least to such an extent as to make recognition between the varieties difficult, if not impossible, particularly in the broken state in which they are generally sold. It is true the odor might still indicate to a certain extent a genuine from a spurious sample, while any one who has bruised the two varieties in a mortar would not fail to notice the irritating effects produced on the throat and nostrils from the downy dust of the biennial plant.

It must be admitted, however, that these are by no means infallible indications of a genuine sample, especially if we keep in mind that the rankness of the odor of the biennial henbane differs at various stages of its development, and, further, that a very small percentage indeed of the genuine in presence of the spurious would entirely vitiate any conclusions arrived at from such a very crude test. In circumstances such as these it is important to know that there is one test, simple but thorough, whereby the presence of even a very minute quantity of the annual plant can be detected among the biennial. It is a peculiarity of the annual variety that, while the deep purple venation of the corolla, so beautifully displayed in the biennial, is sometimes present, it is much more frequently entirely absent, the petals being altogether of a pure sulphur or primrose yellow. This never happens in the case of the biennial, the blossom being almost permeated with very deep purple veins. Mr. Usher informs me that while probably 10 per cent of the annual variety may have the purpel venation less deep and less elaborately intersected compared with the other variety, at least 90 per cent will have the pure yellow blossom. On the other hand, he has not once met with this pure yellow blossom in the biennial variety in all his long experience. Here, then, we have a test, simple but thorough, for detecting any substitution, namely, the occurrence of yellow blossom devoid of purple venation in any suspected sample. The presence of even one pure yellow petal is sufficient to indicate adulteration with the annual plant.

My object in writing this paper would only be half accomplished, did I not protest against the practice which has prevailed of recent years of presenting the henbane plant in a chopped-up or semi-pulverized state. I know of no circumstance which more favors adulteration with inferior qualities, and I may add that I know of none which is less necessary or justifiable. Had such a practice not prevailed, it would have been impossible to foist upon any one, however ignorant, the gross imposition which Mr. Elborne exposed recently at a meeting of the Manchester Pharmaceutical Association, where half a ton of professedly exotic henbane had been offered at the low price of forty shillings per cwt., but which he found to be simply the leaves and stems of Datura Stramo-

nium. The adulteration, or rather, I should say the substitution, there exposed was, to say the least, very clumsy, and very easily detected. The substitution which, it is to be feared, more frequently prevails, and which, owing to the broken or bruised state of the henbane as generally presented to the pharmacist, is very difficult of detection is that of less valuable varieties of henbane for the more valuable officinal variety. Pharmacists, however, have this matter very much in their own hands. Were they in every case to refuse the chopped-up or broken samples, and insist upon being supplied with the flowering tops of the biennial plant alone, that is to say, the cluster detached from the stem where all the finest young leaves converge round the blossom, substitution would be practically rendered impossible. I have attempted to figure (Fig. 4) the appearance of several of these clusters in the dried state, but it is difficult to do more than give a sketch of their general contour. It will be noticed that, while each cluster may exhibit a different outline, they all present one characteristic which it is impossible to mistake. Each cluster detached from the parent stem is complete in itself, and each has the beautiful purple venated petals peeping out here and there from between the mass of young leaves, showing the true origin of the plant. They make a beautiful tincture with, I believe, the maximum effect of the henbane plant, while, in using them, the pharmacist has the satisfaction of knowing that he is using the officinal biennial in a state with which it is positively impossible to mix any of the less valuable varieties, indigenous or foreign.

Patching Platinum Crucibles.

THE author gives his method of avoiding the losses incident to keeping platinum work in repair in laboratories where much fusion work is done. He rubs the crucible and the patch, which should be of stout foil, bright with silica, or rotten stone, welds a light platinum wire to the corner of the patch, and treats the whole for several hours with hot concentrated hydrochloric acid, washing it then with distilled water, and drying. The head of an ordinary iron rivet is rounded off by hammering, and, after being sunk in block of hard wood, is used as an anvil. The anvil is then heated to the highest point with a gas blowpipe, fixed in a horizontal position, and when hot, the crucible is dropped on it. The patch is held over the point of operation, by means of the thin platinum wire, and a few taps of a light hammer serve to fix it to the crucible. The wire is then nipped off, and the patch firmly united to the crucible by continued tapping, the metal being kept at as nearly a white heat as possible. Mr. Seaman has now three such patched crucibles, one of which has served for at least two hundred fusions and is still in good order. — H. J. SEAMAN, *Engin. and Min. Journ.*

Transfusion of Peptonized Blood.

AT a recent meeting of the Paris Academy of Sciences, a paper by Afanassiew was presented, in which he reported the results of experiments made with a view of ascertaining whether blood previously peptonized (at least partly) would be better borne on transfusion than fresh blood or blood treated in a different manner. So far he has obtained very favorable results, having transfused from one dog to another more than 400 cubic cent. (13½ fl. oz.) of peptonized blood (= nearly 100 Cc. of peptone and 300 Cc. of blood).—*Comptes Rend.*, 1884, 1,349.

[ORIGINAL COMMUNICATION.]

CAFFEINE AND ITS DOUBLE SALTS.

BY E. MERCK.

THE medicinal use of caffeine and of its salts has not hitherto been very considerable, it having been confined to the treatment of hemicrania and occasional cases of morphine and alcoholic intoxication, and it remained for modern research to discover the value of caffeine as a remedy for heart diseases.

It is a well-known fact that the caffeine salts which have hitherto been used are comparatively very unstable, the same resolving, on solution, into their component parts, and their use in medicine was, therefore, restricted, owing to their instability, while the comparative insolubility of pure caffeine was, on the other hand, also a hindrance to its medicinal use.

Gubler in 1879, and later Shapter and Leech, called attention to the diuretic action of caffeine, while Leblond and Dr. Brakenridge declared in 1883 that caffeine was a valuable remedy for regulating the action of the heart, and they advanced theories which later research has proved to be correct.

Tanret also pointed out that *caffeine* in combination with the *sodium* salts of *cinnamic*, *benzoic*, and *salicylic acids* was free from troublesome properties of the simple salts, and that these double salts were of constant composition and easily soluble—statements which were fully confirmed by my investigations. These facts having been ascertained, the difficulties in the way of a general use of caffeine in medicine were wholly removed, and this year Dr. Riegel, of Giessen, has continued his clinical experiments in cases of heart disease with the double salts and has obtained results in every respect superior to those which were previously obtained with caffeine and its simple salts.

My double salts of caffeine are prepared in fixed equivalent proportions, so that for instance caffeine sodium benzoate contains 50% caffeine (1.0 gramme of the double salts = 0.5 gramme pure caffeine), the caffeine sodium cinnam[yl]ate and salicylate 62.5% caffeine (1.0 gramme of the double salts = 0.625 gramme pure coffeine). All three combinations are readily soluble in two parts of water at the boiling point; the solutions remain perfect also on cooling to 0° C., even if shaken. Professor Riegel has communicated his experiences with caffeine to the Third Congress on Internal Medicine held this year at Berlin, the following being a resumé of his communication.

Caffeine is a remedy in cases of heart disease, somewhat similar to digitalis; it has, however, the advantage over the latter that its effect is immediate, while the effect of digitalis is not experienced for some days, and further that the patients can bear the doses of caffeine without trouble or difficulty. Only in rare cases do unpleasant effects, nervous excitement, result from the administration of caffeine.

Caffeine does not produce cumulative effects, a point which is of considerable importance, when the toxic effects of digitalis are borne in mind.

Caffeine retards the pulse and produces, at the same time, arterial pressure, as also diuresis (provided the state of the kidneys be histologically normal). It therefore serves as a diuretic and further assists in the production of compensating hypertophy in case of imperfect action and stenosis of the valves of the heart.

In cases when digitalis has failed to produce any further effect, trials with caffeine have often led to satisfactory results, as well as when the patient finds him or herself unable to take digitalis.

The administration of narcotics and especially morphine, at the same time as caffeine, should be avoided; the two seem to act antagonistically.

Caffeine should not be administered in too small doses; those fixed by the Ph. Germ. II. are too small.

Professor Riegel begins cautiously with 0.8 gramme [12 grains] per diem, increasing same quickly, provided the patient be able to bear it, to 1.8 [28 grains] grammes per diem.

The double salts of caffeine produce the full effects of the pure alkaloid and of its simple salts, but possess the great advantage of being readily and easily soluble and of being stable.

DARMSTADT, June 18th, 1884.

Hazeen.

SYMPHONIA FASCICULATA (Dup. Th.) is a handsome Madagascar tree belonging to the family of Clusiaceæ. It is named by the natives *hazeen* ("hazigne"), or "little *vongo*," and its fruit is called *voa-su-vuara*, according to Poivre (in a note in Jussieu's herbarium). All portions of the tree are filled with a milk-sap. The branches, leaves, and fruit, when incised, exude this in form of a viscid, bright-yellow juice, which soon turns to resin on exposure to air. This is, of course, inflammable; it is used to make torches of and for calking ships.

The fruits are ovoid-acute, about 1½ decimeter (6 inch.) long, and 1 Dm. (4 inch.) thick, and have a thick, coriaceous and slightly rugged skin. Each contains from 60 to 100 obovoid seeds, about 2 Cm. (¾ inch) long, pale-gray, and marked with a handsome network of vascular vessels on the surface. It contains a single obovoid embryo containing a large quantity of fatty matter.

This fatty matter is eatable, but the natives employ it also for burning in lamps and for a great variety of domestic and *medical* uses. Among its special uses is that in form of salve, prepared by mixing the fat with the resin exuded by the tree, as a remedy in skin diseases (such as leprosy, itch, and ulcers) and as an embrocation in rheumatism and contusions.

A chemical analysis of the seeds is in progress.—H. BAILLON in *J. de Ph. et Ch.*

Aveloz Milk.

THIS is the milky juice of an euphorbiaceous plant, found in the interior of the Brazilian province of Pernambuco, and south of Parahyba. Its vulgar name is *aveloz*, and there are three varieties distinguished, popularly known as "male aveloz," "female aveloz," and "wild aveloz." The sap of the wild is said to be sweet, and exceedingly digestive; that of the male is said to be caustic, and that of the female (*Euphorbia Phylanthus*) to have the properties of both of the former in a lesser degree.

This milky juice is highly lauded by Brazilian practitioners as an effective remedy in cancer. It is not applied in its fresh condition, as it is too diluted; but it is first concentrated to a solid extract, then "assayed" [how?] and dissolved in white vaseline. It is applied with a soft pencil or brush.—After *Chem. and Drug.*

This remedy has only been known and used since about November of last year. Whether the extremely favorable reports as to its efficacy will be confirmed by others remains to be seen, but seems to be very problematical.

Barbadoes Aloes is likely to become yet an article of export from St. Helena. The plant is spreading quite largely over considerable tracts of the island.

Essence of Limes from Trinidad.

MR. E. M. HOLMES has examined some oil of limes which was offered for sale in the London market in March last. It had such an exceedingly fragrant odor, and resembled in odor and taste so closely the finest or "perfumer's" essence of lemon that it was doubted whether it was obtained from limes.

On examination, its boiling point and color reactions were found to closely correspond with oil of lemon; its sp. gr. (0.8741) was a little higher than that of the latter (0.8566 to 0.8655), but in solubility it differed greatly. While commercial oil of lemons is barely soluble in 15 parts of alcohol (sp. gr. 0.838), the Trinidad oil of limes is soluble 1 in 5 parts; so is also commercial oil of limes. Its taste is different from the latter.

On inquiry of Mr. Holmes, Mr. H. Prestoe, Director of the Botanic Gardens at Trinidad, informed him that the odor of West India, or specially of Trinidad limes, is rather that of lemons. The tender parts of the lime there have the odor of *Aloysia citriodora* (lemon-scented verbena). In the treatment of the fruit for the oil, the more rapid the process, the more pronounced will be the lemon odor, provided fresh fruits are used. A strong flavor of limes, more or less tinged with that of turpentine, seems to be the result of treating stale or decomposed fruit tissue. The plan adopted in Dominica and Montserrat, of crushing the limes as received from day to day, and then, on the attainment of a large quantity of pulp, proceeding to boil down or distil, *seems completely to destroy the fine flavor* of the resulting essence. In some places, limes and lemons are grown on the same field, and both are worked off by hand together. The West India limes are the finest, and quite unmatched for size and exuberance in any part of the western tropics.

Selections from the New York and Brooklyn Formulary.

ELIXIR ADJUVANS.

Adjuvant Elixir.

Sweet Orange Peel	2 av. oz.
Coriander	1 " "
Caraway	1 " "
Wild Cherry	4 " "
Glycyrrhiza, Russian, peel'd.	6½ " "
Alcohol, Water, each	a suff. quan.
Syrup, enough to make	1 gallon.

Grind the solids to a moderately coarse (No. 40) powder, and having mixed *one* (1) *volume* of alcohol with *two* (2) *volumes* of water, moisten the powder with *four* (4) *fluidounces* of the mixture, and pack tightly in a percolator. Then gradually pour menstruum on top, until *eighty-eight* (88) *fluidounces* of percolate are obtained. Mix this with *forty* (40) *fluidounces* of syrup, and filter.

Comment. This is an excellent vehicle for the administration of disagreeably-tasting saline or bitter medicines. It has been adopted after numerous trials, as the best vehicle for disguising alkali bromides or iodides.

ELIXIR TARAXACI COMPOSITUM.

Compound Elixir of Taraxum.

Taraxacum	480 grains.
Wild cherry	480 "
Sweet Orange Peel	480 "
Glycyrrhiza, Russian, peeled	960 "
Cinnamon	120 "
Cardamom	120 "
Canada Snake Root	120 "
Caraway	120 "
Cloves	120 "
Pure ext. of Glycyrrhiza.	60 "
Alcohol, Water, each	a suff. quan.
Syrup	32 fl. oz.

Grind the solid substances to a moderately coarse (No. 40) powder, and percolate, in the usual manner, with a mixture of *one* (1) *volume* of alcohol, and *two* (2) *volumes* of water, until *sixteen* (16) *fluidounces* of percolate are obtained. In this dissolve the extract, and, lastly, add the syrup.

If a precipitate should make its appearance in the elixir, on standing, it should be incorporated with the liquid by shaking, before use.

Comment. The above formula has been in successful use and considerable demand long before being incorporated in the Formulary, and the committee is indebted for it to the disinterestedness and liberality of one of its own members. It will be found one of the best, if not the very best, vehicle for quinine and other equally bitter substances.

The formula has elicited some correspondence lately, in regard to the apparently small quantity of percolate (16 fl. oz.) directed to be collected. It maintained that the 16 fl. oz. would not contain the whole of the soluble matters in the aromatics. Mr. S. J. Bendiner, the author of the formula, replied to it (in *Pharm. Rec.*), by stating that the 16 fl. oz. contained all that is practically requisite, the little matter remaining behind being of no account for the purposes for which the elixir is intended. We are of the same opinion. Still, if any one wants to be very exact, he may use the process of repercolation, and use the reserved dilute tincture obtained in exhausting the previous lot, for moistening a new lot and obtaining the first percolate of 16 fl. oz.

ELIXIR CATHARTICUM COMPOSITUM.

Compound Cathartic Elixir.

Resin of Podophyllum	8 grains.
Resin of Leptandra ("Leptandrin")	16 "
Alcohol	½ fl. oz.
Fluid Extract of Senna	2 "
Tartrate of Potassium and Sodium	2 av. oz.
Bicarbonate of Sodium	120 grains.
Syrup	2 fl. oz.
Compound Elixir of Taraxacum	2 fl. oz.
Elixir of Glycyrrhiza, enough to make	16 "

Dissolve the resins in the alcohol, and add the solution to the other liquids previously mixed, and in which the tartrate of potassium and sodium, and the bicarbonate of sodium have been dissolved.

The product should *not* be filtered, and should be shaken up before any portion of it is dispensed.

Average Dose: 2 fluidrachms.

Comment. This preparation has been in regular use in the practice of various physicians in New York and Brooklyn. It has also been employed, with excellent results, in public hospitals. A prompt and pleasant liquid cathartic, as a substitute for the usual bilious pills, is often desired, and the above formula, submitted to and approved by competent medical authority, will be found of wide applicability.

"ELIXIR OF CALISAYA."

The Formulary provides for *two* different kinds of this, one made from Cinchona bark, and the other from Cinchona alkaloids.

a. ELIXIR CINCHONÆ.

Elixir of Cinchona.

(Elixir of Cinchona Bark; Elixir of Calisaya Bark.)

Tincture of Cinchona (U. S. Ph., 1880)	2½ fl. oz.
Aromatic Spirit	2 " "
Syrup	6 " "
Phosphate of Calcium	120 grains
Water, enough to make	16 fl. oz.

Mix the liquids, allow the mixture to stand for twenty-four hours or longer, then incorporate the phosphate of calcium, and filter through a well-wetted filter, returning the first portions of the filtrate until it runs through clear.

Each fluidounce represents about 14 grains of yellow cinchona.

b. ELIXIR QUININÆ COMPOSITUM.

Compound Elixir of Quinine.

(Elixir of Cinchona Alkaloids. Elixir of Calisaya Alkaloids.)

Sulphate of Quinine	16 grains
Sulphate of Cinchonine	8 "
Simple Elixir	16 fl. oz.

Triturate the sulphates of quinine and cinchonine with a portion of the simple elixir, then mix with the remainder, and agitate well until the salts are dissolved. Finally filter.

Each fluidounce contains 1 grain of sulphate of quinine and ½ grain of sulphate of cinchonine.

If it is desired to impart to this elixir a brownish color, this may be effected by the addition of 10 minims of caramel to each pint.

Comment. The quantity of sulphate of quinine and sulphate of cinchonine here directed approaches very near to the utmost limit which the simple elixir will dissolve. When the committee studied the elixirs of cinchona and other alkaloids, it made the observation—already noticed by others before—that the bitterness of these is much increased by adding acids to the solutions or by using comparatively soluble salts. Solutions of the pure alkaloids themselves in any liquid, taste much less bitter than the solution of a corresponding quantity of a soluble salt. It was attempted to employ this observation in the case of the present elixir in this way, that a sufficient quantity of water of ammonia was added to combine with the sulphuric acid of the quinine salt, so that the quinine might be set free and remain dissolved, *as such*, in the menstruum. After several months' standing, however, samples of the elixir thus prepared showed slight precipitates, no doubt owing to the fact that a trifling excess of ammonia had been used. The attempt was therefore abandoned and a simple solution of the alkaloidal sulphates in elixir adopted.

Regulating the Temperature of an Air-Bath.

IN order to preserve a constant temperature in an air-bath (often necessary in technical laboratories where the same operations constantly recur), the most certain and simple method, according to Prof. Lothar Meyer, is to to employ one of the small French gas regulators made by Giroud, and known by the name of *rheometer*. They are sold at about four or five francs apiece. The complete series comprises fourteen, each of which permits the passage of a definite quantity of gas per hour, namely, of 50, 60, 80, 100, 120, 130, 140, 150, 160, 170, 180, 190, and 200 liters. Prof. Meyer has found that they are, almost without exception, thoroughly reliable. If one, or several of these, be interposed between the gas supply and the burner, a very steady and constant temperature is obtained. If another temperature is wanted, a different rheometer should be interposed. Hence it is advisable to have the whole series. Where, however, only certain fixed temperatures are required to be maintained, it is only necessary to ascertain from the gas-meter the amount of gas consumed per hour for each of these temperatures when the correspondent rheometer be selected or purchased.

These rheometers are best used in connection with the air-baths constructed by Prof. Meyer (see NEW REM., 1883, p. 236).—After *Ber. d. Deutsch. Chem. Ges.*, 1884, 483.

Notes on Commercial Drugs and Chemicals.

(From Gehe & Co.'s Handelsbericht.)

(Concluded from p. 113).

Ethene Bromide and Chloride.—These two liquids, $C_2H_4Br_2$ and $C_2H_4Cl_2$ respectively, have lately again been in somewhat more increased demand as anæsthetics. *Ethene Iodine*, $C_2H_4I_2$, a crystalline solid, has also been used for similar purposes.

Ethyl Bromide — C_2H_5Br — which chiefly serves for internal use, while those mentioned in the preceding paragraph are preferred for external application, was also in good demand.

Bromine.—The large production of this article has for a long time been far in advance of the demand for bromides, for which it was principally consumed. Attention has lately been directed to its powerful antiseptic and disinfectant properties, and the invention of Dr. A. Franck of Charlottenburg, to employ it in form of cakes—composed of kieselguhr into which bromine has been soaked up—have made its universal employment easy and practical.

It may be useful to remember that about 5 gm. (75 grains) of "solidified bromine" (containing about 75% of liquid bromine) are required to thoroughly disinfect a cubic meter of space (about 34 cubic feet). The vessel containing the bromine or bromine-block should be put, open, in an *elevated* place in the room, since bromine vapor is 5½ times as heavy as air and at first sinks to the bottom. For disinfecting large rooms, buildings or hospitals, the inventor has constructed special apparatus [all of which simply insure the uniform and gradually diffusion of the vapor throughout the confined space].

Quinidine (Hesse's *Conchinine*)—which only a few years ago was worth twice as much as cinchonidine, is now even cheaper than the latter alkaloid [this is not quite the case here], which has had a very large demand especially from the U. S., while the great quantities of cuprea bark worked by manufacturers during the last few years have furnished an abundant supply of quinidine, more than enough to satisfy the demand.

Chloral.—A slight increase in price took place, but it is reported that new works are being built for its manufacture. Its consumption appears to diminish slightly.

Elaterium.—The production of white elaterium during last year's season was short and the price therefore ruled higher. Nevertheless that of *crystallized elaterin* has remained at its old figure.

Extractum Ferri Pomati.—Gehe & Co. are in the habit of filtering the extract while liquid, before it is evaporated in the vacuum apparatus. But, on trying to redissolve it, there always will be found a slight insoluble sediment. Gehe & Co. have now found that, by adding a little freshly precipitated ferric oxide, a clear filtrate can be immediately obtained. This expedient, however, was useless when tried on a large scale.

Hyoscyamine.—Gehe & Co. (and probably some other manufacturers) prepare a crystallized hyoscyamine as well as two kinds of amorphous, one of which is prepared form the seeds, and the other from the whole herb. The latter is a "crude hyoscine."

Iodoform.—Neither the consumption of iodoform as a dressing for wounds, nor that of corrosive sublimate as an antiseptic in surgery show any diminution in demand. It is scarcely possible to keep pace with the orders coming in, particularly for the levigated article, which must afterwards be dried in the air, which requires a long time.

Naphtalin — can now be supplied also in form of powder, though this is not as white as the crystals; it is, however, lower in price.

Ichthyol.—It has been agreed upon to use the term *ichthyol* hereafter only to denote the crude product obtained from the bituminous mineral found near Seefeld in the Tyrol. On the other hand, the artificial product, used in medical practice against rheumatism, skin diseases, etc., and which is only prepared by Gehe & Co., is termed "ichthyol-sulphonate of sodium," the demand for which has been moderately active.

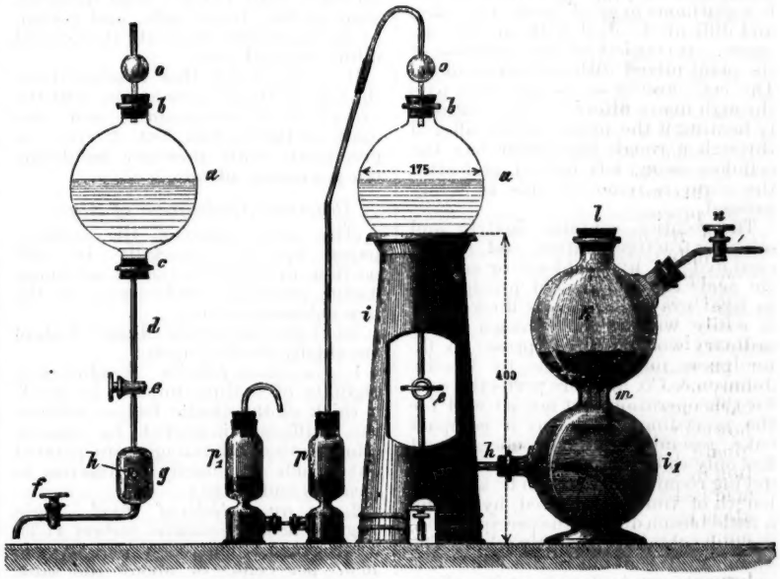
Pancreatin in dry form is in increasing demand, less so in Germany than abroad.

Pepsin.—The consumption of this article is constantly increasing, the amount used in 1883 being twice that of the preceding year. Attention is drawn to one American variety of great digestive power (700%), but it seems that Germany prefers a 100% pepsin [we doubt this, ED. A. D.].

Podophyllotoxin.—The active principle of podophyllin has been prepared in larger quantities. It is believed by Gehe & Co. that some of it is used in the manufacture of certain popular laxative dragées and confections.

IMPROVED SULPHURETTED HYDROGEN APPARATUS.

OF the many forms of hydrosulphuric apparatus so far devised, that of Kipp is probably the most elegant, but unfortunately it has many drawbacks, among them chiefly those that it cannot be re-charged without taking the apparatus altogether apart, and that the saturated acid solution cannot be drawn off *in loco*.



Reinhardt's improved sulphuretted hydrogen apparatus.

These and other defects are completely removed by the modification devised by C. Reinhardt.

The acid-reservoir, of the capacity of about two liters (one-half gallon), is a glass globe provided with two necks, *b* and *c*. Through the stopper in *c* passes a tube of eight millimeter bore, which is provided with a stop-cock *e*, a mud-trap *g* (with lateral neck *h*), and another stop-cock *f*.

The glass globe rests upon a conical support made of sheet zinc, in which three openings are left; one in the centre, to permit access to the faucet *e*; another below, corresponding to faucet *f*, and another at the side, corresponding to the neck *h*.

The tube *h* connects the acid-reservoir *a* with the secondary reservoir i_1 by means of a rubber stopper. *k* serves as a receptacle for the sulphide of iron, and may be easily refilled at any time by removing the stopper *l*. The generated gas passes off through the faucet *n*.

In the neck *b* of the acid-reservoir is inserted a rubber stopper bearing a glass tube with bulb *o*, which leads by a rubber connection to the absorbers *p* and p_1, the lower portion of which is filled with solution of potash, while the upper portion contains pellets of glass wool and glass beads.

The apparatus is charged and used as follows: Sulphide of iron having been introduced into *k*, the stopper *l* is inserted air-tight. Next the connecting tube *h* is passed through the rubber stopper, the piece *g* is attached and the stopper tightly inserted in the neck. The zinc cone is now placed over the glass tube *d*, upon which the rubber stopper connecting with *c* has previously been slipped. Next the globe *a* is connected by the insertion of this stopper. The faucet *e* being closed, a sufficient amount of acid is now poured into the reservoir (best a mixture of one volume of crude hydrochloric acid and one volume of water), and the tube *o* is next inserted.

On now opening the faucets *e* and *n*, the acid rises into *k*, and the evolution of gas begins. On closing faucet *n*, the pressure of gas causes the acid to re-ascend in *a*. Any accompanying hydrosulphuric acid gas is arrested by the potash solution in *p* and p_1. Finally the faucet *e* is closed, and the apparatus is at rest.

When the acid is exhausted, it is drawn off from faucet *f*, after opening *e* and *n*.

[This apparatus (which appears to us to be indeed the most convenient and perfect yet devised) is made by C. Gerhardt (Marquardt's depot of chem. apparatus), in Bonn, and may be obtained through any first-class dealer in chemical apparatus.]—*Zeitschr. f. anal. Chem.*, 1884, 169.

Bisulphite of Sodium, which was recommended by Professor Lunge as a neutralizer of chloride of lime or, in other words, as "antichlor," is finding its way into many industries, for instance that of the paper manufacture. It has been found that one part of this salt can neutralize about as much chlorine as five parts of crystallized hyposulphite of sodium (or antichlor).

Hamamelis Virginica has had a very unfavorable verdict bestowed upon it by Prof. Dujardin-Beaumetz, at a late meeting of the Paris Therapeutical Society. He stated that, while not agreeing with those who believed no substance could possess therapeutic properties unless it were poisonous in large doses, yet he felt constrained to say that he had never observed even the slightest physiological effects from witch-hazel.

Algin and Sodium Alginate and their Economic Uses.

(ABSTRACT from a paper "On the Economic Applications of Seaweed" by Ed. C. C. Stanford, F.C.S., read before the Soc. of Arts, London).

If the long fronds of *Laminaria stenophylla* be observed after exposure to rain, a tumid appearance will be observed, and sacs of fluid are formed from the endosmosis of the water through the membrane, dissolving a peculiar glutinous principle. If the sacs be cut, a neutral glairy colorless fluid escapes. It may often be seen partially evaporated on the frond as a colorless jelly. This substance which is then insoluble in water, is the remarkable body to which I have given the name of *algin*. The natural liquid itself is miscible with water, but coagulated by alcohol and by mineral acids. It contains calcium, magnesium, and sodium in combination with a new acid, called by the author *alginic acid*. When this natural liquid is evaporated to dryness, it becomes insoluble in water, but is very soluble in alkalies. This new substance is so abundant in the plant that, on maceration for twenty-four hours in sodium carbonate in the cold, the plant is completely disintegrated. The mass thus obtained is a glutinous mass of great viscosity, and difficult to deal with on that account. It consists of the cellulose of the plant mixed with sodium alginate. The cells are so small that they pass through many filters, but by cautiously heating it the mass can be filtered through a rough linen filter bag, the cellulose being left behind, and after the algin is removed, this is easily pressed.

The solution contains dextrin and other extractive matter, and is precipitated by hydrochloric or sulphuric acid; the alginic acid precipitates in light gray albuminous flocks, and is easily washed and pressed in an ordinary wooden screw press. A filter press made for me by Messrs. Johnson & Co. answers perfectly well for this operation, but not so well for the preceding. It forms a compact cake, resembling a new cheese, and has only to be stored in ordinary cool drying rooms, where it can be kept any length of time. If desired, by adding a little bleach during the precipitation, it can be obtained perfectly white. The algin can be sent out in this state; it is only necessary to dissolve it in sodium carbonate in the cold for use. If, however, it be sent out as sodium alginate, it must be dissolved to saturation in sodium carbonate, the carbonic acid is disengaged, and sodium alginate is formed. If potassium or ammonium carbonate be used, the alginates of potassium or ammonium are formed, which are similar to the soda salt. The bicarbonates of these alkalies may also be used, but the caustic alkalies are not such good solvents.

The sodium alginate forms a thick solution at two per cent, it cannot be made above five per cent, and will not pour at that strength. Its vicosity is extraordinary. It was compared with well boiled wheat starch, and with gum arabic in an ordinary viscometer tube. It was found that algin had *fourteen* times the viscosity of starch, and *thirty seven* times that of gum arabic. The solution may be alkaline, or neutral, or acid, according to the degree of saturation; if alkaline, it may be made distinctly acid by the addition of hydrochloric acid, but any excess at once coagulates it; a two per cent solution becomes semi-solid on this addition.

The evaporation is effected in a similar manner to that of gelatin, in thin layers on trays or slate shelves in a drying room with a current of air or on revolving cylinders heated internally by steam; high temperatures must be avoided. The solution keeps well. Thus obtained, the sodium alginate presents the form of thin, almost colorless sheets, resembling gelatin, but very flexible. It has several remarkable properties which distinguish it from all others known substances.

Algin or sodium alginate in solution is precipitated or coagulated by alcohol, ethylic and methylic, acetone and collodion (but not by ether), by hydrochloric, nitric, sulphuric, and many other acids, as well as many salts [all enumerated in the original].

The solution is not precipitated nor coagulated by alkalies and salts of alkalies, potass. bichromate and chromate; starch, glycerin, ether, cane sugar, amylic alcohol, boracic acid, acetic, carbolic, tannic, and certain other acids [and some other substances enumerated in the original].

It does not precipitate the ordinary alkaloids.

It is distinguished from albumen which it most resembles, by not coagulating on heating, and from gelose by not gelatinizing on cooling, by containing nitrogen, and by dissolving in weak alkaline solution, and being insoluble in boiling water.

From gelatin, by giving no reaction with tannin; from starch, by giving no color with iodine; from dextrins, gum arabic, tragacanth, and pectin, by its insolubility in dilute alcohol and dilute mineral acids.

It is remarkable that it precipitates the salts of the alkaline earths, with the exception of magnesium, and also most of the metals, but it gives no precipitate with mercury bichloride nor potassium silicate.

Practical Application of Algin.

(The great value of the author's paper appears especially in this portion, in which he points out many useful practical applications of the new substance algin.)

The following practical uses of algin are chiefly dwelled upon:

1. *For sizing fabrics.* A solution of alginate of sodium imparts to goods a thick clothy elastic feeling without the stiffness imparted by starch. (Many other advantages are pointed out which are chiefly of interest to weavers and dyers.)

2. *As an Article of Food.* Algin [alginic acid?] contains carbon 44.39, hydrogen 5.47, nitrogen 3.77, oxygen 46.37 per cent, or about the same amount of nitrogen as Dutch cheese. It has a slight pleasant marine taste, easily overcome if objected to, and may form a useful addition to the kitchen for thickening soups and puddings.

3. *For Pharmaceutical Purposes.* It appears especially applicable for replacing gum arabic in the manufacture of jujubes and lozenges. To make it into jelly requires the addition of gelose or gelatin or the admixture of lemon juice.

It will also be useful for making emulsions of oils (cod-liver oil, etc.), as an excipient for pills, for the fining of spirits [and the manufacture of empty capsules].

4. *For Boiler Incrustations.* The addition of 1 pound of algin to every 1,000 gallons of water in the boiler has been found to produce a calcium deposit of so favorable a condition that it may be blown off with ease. It has been very favorably reported upon.

5. *For Boiler Covering.* Seaweed charcoal mixed with algin has been used advantageously for this purpose under the name of "carbon cement."

The author sums up the results of his investigations and the benefits to be derived from the practical application of the products described in the following manner:

1. The only way to effectually utilize seaweed is to import it in the raw state.

2. By following the wet process, the additional cost is fully made up by the greatly increased amount of iodine and salts obtained from the water solution, leaving two-thirds of the plant for further treatment.

3. That by extracting from this the algin and the cellulose we utilize the whole plant and obtain two new products of considerable commercial importance.

4. That the process is extremely simple, and requires no extravagant plant, nor do operations on the large scale present any serious practical difficulties.

5. That the new substance, algin, has very remarkable properties, which may find many applications not yet known, when it can be put on the market.

6. That the demand for such a substance in fixing and mordanting fabrics alone is enormous.

Our annual export of textile manufactures and yarns is valued at £40,000,000, or more than half the value of our total exports; and a large portion of this requires some dressing material to fit it for the market. We import about £200,000 worth of gum arabic, a good deal of which is used for this purpose; and the war in the Soudan is raising its price and making it scarce.

7. That the supply of raw material is almost unlimited. Seaweed damaged by rain is equally available for the manufacture of algin.

Adulterated Fruit-Jam.

F. A. ADAMS has made an interesting report on English commercial fruit-jams, of which he has analyzed a number. There being no guide or reliable process previously known or agreed upon, the author had to evolve a method of his own, and in order to start from correct premises, prepared a series of pure jams himself.

The constituents to be determined chemically were: glucose, cane-sugar, other soluble matters, ash, and moisture.

The sugar in one hundred parts of dried jam amounted from 74.77 to 96.98 per cent, and it was found that most of this is *inverted*. In this lies the chief distinction of the different jams experimented on; for while in the author's home-made jam not more than about 6.71 per cent of *uninverted* sugar could be found, in the commercial varieties a good deal of it remains uninverted.

The principal ingredient of adulterated jam is apple pulp, which is easily recognized by the behavior of the cells of the pulp towards tincture of iodine. While it is next to impossible to actually identify the peculiar cells of the blackberry, raspberry, etc., etc., under the microscope, and the identity of these jams can be deduced more safely from other considerations, *apple* jams may be rendered evident, under the microscope, by the fact that its cells—to the exclusion of all other cells—are stained a characteristic pinkish purple or greenish color. In the raw apple this color does not necessarily occur when treated with iodine, but always occurs after boiling the apple pulp with dilute acid; but the natural acid of the fruit is usually sufficient by itself gradually to determine the reaction.—*The Analyst.*

Paraldehyde Elixir for Insomnia.

YVON recommends the following formula:

	Gm.	
Paraldehyde	10	= 160 min.
Alcohol, 90%	40	14 fl. dm.
Tinct. Vanilla	2	½ " "
Water	30	1 fl. oz.
Syrup	60	1½ " "

Dose: 1 to 2 teaspoonfuls.

The "Drop" Method of Chemical Analysis.*

BY DR. H. HAGER.

THE customary methods for testing medicinal agents, which are both tedious and require a larger quantity of material, can be superseded by a method which requires merely single drops of the reagent, as well as of the liquid to be examined. For this method the following reagents are needed:—

Red and blue litmus paper and turmeric paper.

Extract of indigo paper, which is turned yellow by hot nitric acid and caustic alkalies, but not by ammonia.

Rosaniline paper as a test for alcohol.

Potassium ferrocyanide paper as a reagent for ferric salts (blue), copper and uranium (deep brown), gold (greenish-brown), platinum (brownish-green to reddish), thallium and vanadic acid (yellow).

Potassium sulphocyanide paper is turned decidedly yellow by bismuth nitrate, bluish black by salts of copper, red by solution of gold, white by mercuric nitrate, black by mercurous nitrate, and blood-red by ferric salts.

Potassium iodide paper is turned red by mercuric salts, green by mercurous salts, yellow by solution of lead. For detecting chlorates 2 to 3 Cc. of the liquid are placed in a small test-tube along with a slip of the paper; 1 Cc. of dilute sulphuric acid is then added, and heat is applied. If chlorate is present the liquid turns yellow.

Mercurous nitrate paper serves when moistened to detect ammoniacal gas, which turns it black; caustic alkalies and alkaline mono-carbonates stain it greenish-brown to black, whilst the alkaline bicarbonates leave it colorless.

Silver bichromate paper turns yellow with free hydrochloric acid.

Besides these the author mentions a number of other papers less frequently needed. The use of all consists in letting a drop of the liquid in question fall upon a slip of the paper.

The author tests for arsenic (arsenious and arsenic acids) by means of slips of sheet brass, 2.5 to 3 centimetres in width and 15 to 17 centimetres in length. The hydrochloric solution is mixed with a little oxalic acid, or the ammonical solution is supersaturated with hydrochloric acid and mixed with oxalic acid in order to reduce arsenic to arsenious acid. A drop of the solution is put upon a brass plate and sharply dried; the place of the drop is then washed with water, when a dark spot of a permanganate color reveals the presence of arsenic. Dark thin outlines still appear in case of dilution with 150,000 parts.

In cases where the papers and the brass plate are not used the author places the two drops (of the reagent and the liquid in question) near each other upon a slip of glass and mixes them. The transparency of the glass renders the slightest turbidity visible. —*Pharmaceut. Central-Halle and Chemiker Zeitung.—Chem. News.*

Bois Piquant, or stinging wood, is reported in the *Répertoire de Pharmacie* by Dr. Heckel Schlagdenhauffen to have notable febrifuge properties. It is a native of Cayenne, and comprises two varieties of *Zanthozylum* (*Z. caribeum* and *Z. perrotetti*). The physicians of Guinea and the Antilles have for a long time been aware of its antefebrile properties, and have held it in high estimation. The writers quoted have separated from the bark a colorless crystalline substance having the formula $C_{12}H_{24}O$ and melting at 285° C.

* Some translators of the German term "Tropf-Methode" have rendered it in English quite incorrectly "guttural method." The *Chem. and Drug.* uses the term "guttulous method" which is at all events preferable. "Drop-Method" is better than either.—ED. A. D.

Brucine a Test for Tin.

DISSOLVE 0.1 gramme of crystallized brucine in 1 C.c. pure nitric acid, and 50 C.c. water, heat to boiling, and cool. This solution gives a purple coloration with solutions containing stannous chloride. Neither zinc chloride, nor nascent hydrogen, nor organic matter, interferes with the reaction, but ammonium sulphide and sodium hyposulphite act like stannous chloride. To test for tin, dissolve the mixed sulphides of antimony and tin, obtained in the ordinary analytical separation, in hydrochloric acid, evaporate, dilute with water, and place a strip of platinum and a strip of zinc in the solution and in contact for several hours; metallic antimony is deposited on the platinum, whilst stannous chloride remains in solution, and can be tested for with a few drops of the brucine reagent. A distinct color has been obtained with a drop containing only 0.0000025 gramme of stannous chloride, whilst a drop containing 0.00002 gramme gave a barely perceptible cloudiness with mercuric chloride. The reagent must not be too dilute, or the color will be pale and indistinct; neither must it be used in excess, for then dirty green is produced instead of purple. The author finds this test for tin more delicate, more striking, and more convenient than the mercuric chloride test.—E. R. DRYER, in *Chem. News.*

A Cholera Remedy.

THE *Chemist and Druggist* of July has the following:

None will be surprised that current literature, medical or otherwise, should be filled with suggestions for the treatment of cholera. Amongst others, Dr. Tison draws attention to a remedy which obtained a certain celebrity in Paris during two previous visits of this epidemic. It was introduced by Dr. Roux both in 1849 and in 1852, and appears in his hands to have been successful. Other physicians of note also were fortunate in its use. The formula is as follows: Dissolve 10 grains of washed sublimed sulphur in rectified sulphuric ether, aiding the solution, if necessary, by gentle heat; immersion of the bottle in warm water is sufficient. Ether dissolves $\frac{1}{85}$ of its weight of sulphur; rectified spirit only $\frac{1}{100}$; consequently highly rectified ether should be selected; 25 drops to 30 are added to a half a wine-glass of sweetened water; seltzer water sufficient to fill the wine-glass completing the mixture, which is then to be given in divided doses. Simple as the preparation seems, it is stated to have proved effectual. M. Boutigny, in an inaugural thesis in 1872, strongly supported this statement, declaring that he had obtained signal success by means of the ethereal solution of sulphur. A strange circumstance is related by the same authority. A patient, evincing dislike to ether as a remedy, had administered to him as a substitute an opium and bismuth preparation, when the symptoms which had yielded to the ether treatment immediately reappeared.

Latour's Chloride of Zinc Paste.

Chloride of Zinc	50 parts.
Nitrate of Zinc	100 "
Water	80 "

Dissolve with the aid of heat, and when cool, add to each 100 parts 75 parts of wheat flour. Make a paste and then roll into sheets one-eighth of an inch thick. Preserve in a well-stoppered bottle.—*St. Louis Druggist.*

Muriate of ammonia is said to prevent disturbance of the stomach when tincture of the chloride of iron is administered, when combined in the proportion of one-half grain of the muriate to each minim of the tincture.

Improvement on Fehling's Sugar Test.

As is well known, cuprous oxide separates but slowly from solutions of glucose, especially from weak ones, and in order to determine the end of the titration, filtering has to be resorted to, which is very difficult to effect properly even when a double filter is used.

F. Meyer avoids all filtering, and at the same time hastens the precipitation of cuprous oxide by adding to the boiling liquid, towards the end of the filtration, a few drops of a solution of zinc chloride. The hydrate of zinc oxide formed causes a quick precipitation of the cuprous oxide, and the supernatant, quite clear liquid readily admits of being tested in the usual way with potassium ferrocyanide or copper sulphate. In case the zinc chloride added should have used up the caustic soda of the Fehling's solution, a few drops of a solution of caustic soda must be added.—*Pharm. Z. f. Russl., Chem. and Drug.*

Sophistication of Iodoform with Picric Acid.

DR. BIEL has recently found a common adulterant of iodoform to be picric acid, which is very suitable for the purpose, since iodoform containing it will nevertheless stand the Pharmacopœial tests.

Picric acid may be detected by shaking up some of the iodoform to be tested with water and filtering. The filtrate must be perfectly colorless; even a lemon-colored solution would indicate the presence of picric acid. The filtrate is treated with a solution of potassium cyanide, and if the iodoform is pure, no change is noticed, but if it had contained even a trace of picric acid, within about ten minutes a brownish-red coloration, due to the formation of isopurpuric acid, is formed.—*Pharm. Z. f. Russl., Chem. and Drug.*

Pasteurizing Beer.

ACCORDING to Behrend, yeast cells are not killed by warming; the author, on the contrary, finds that at 55° all the cells are killed. Yeast killed at 55° placed in a food solution with addition of fresh malt-extract, did not show a single living cell after 40 hours at a temperature of 6–7°. Every single bottle of beer should be heated uniformly for a considerable time to the necessary temperature, say 2–3° over 55°. Badly pasteurized beer remains clear when kept cool, but the warmth of a room turns it turbid from formation of yeast, bacteria, fungi, albuminate, and some hop resin. The turbidity of well-pasteurized beer the author finds to be due to a separation of gluten; by heating such beer to 50° it will again become clear, and remain so for a long time.—M. SCHWARZ in *Bied. Centr.*

Hill's Balsam of Honey and Tar.

Balsam of Tolu	℥ ij.
Styrax	ʒ ij.
Opium	ʒ ss.
Honey	℥ viij.
Pine Tar	℥ i.
Alcohol	ʒ xxxij.

Mix and macerate for five days, with occasional agitation, strain, and bottle.—*National Druggist.*

Esmarch's Painless Caustic.

Arsenious Acid	1 part.
Sulphate of Morphine	1 "
Calomel	8 parts.
Polarized Gum Arabic	48 "

When used for the removal of warts, tumors, etc., the surface skin should be removed with a knife or blister, and the powder sprinkled on the denuded surface daily.—*St. Louis Druggist.*

ON A NEW OVERFLOW PIPETTE.

THE well-known overflow pipettes of Gay-Lussac and Stas, whilst adapted for the accurate measurement and delicacy of a given volume of a solution, are not so fit for the use of corrosive fluids, and are not easily extemporized from materials commonly found in a laboratory.

The following pipette is especially adapted for use in alkalimetry, and for the employment of such corrosive solutions as are used in the "copper" method of estimating sugar (Fehling's etc.).

Eyster's overflow pipette.*

An ordinary pipette graduated to deliver a definite volume, is clamped in a reverse position, that is, with the mark down and the jet up. A short piece of rubber tube connects the end that is now the lowest end with one arm of a glass T-tube, the other arm of which is provided with the usual Mohr burette tip or with a glass-bead cock.

This glass-bead cock is simply a short piece of glass rod, somewhat larger than the bore of the rubber tube fused into a bead. This bead, inserted into the rubber tube, effectually stops the flow. When it is desired to open the cock, a slight pinch of the tube over the place where the bead is concealed will open a channel for the passage of the solution. The flow can be regulated with the greatest nicety. This piece of apparatus is old, but does not seem to be as generally known as it should be.

To the lateral arm is attached the rubber tube and pinch-cock which supplies the pipette with the solution from the reservoir. The reservoir is either a common bottle provided with a siphon, or an aspirator bottle. The higher the level of the reservoir above the tip of the pipette, the quicker the pipette will be filled.

In place of the glass cups used in the Stas pipette, I make use of the following arrangement to catch the overflow from the open end.

A large test-tube is fitted with a cork with two holes. Through one the jet of the pipette is passed. One arm of a rather wide bent glass tube is inserted in the other hole. This is the drip tube, and is provided with a rubber tube to carry away the excess of solution.

It is easy to see the mode of action. When the pinch-cock leading to the reservoir is opened, the solution enters and fills the pipette; the air escapes through the drip-tube. When the solution is to be delivered, the lower cock is opened, and the fluid run out until the mark is reached; the air meanwhile enters by the drip-tube, and for this reason care must be taken to have the drip-tube as wide as possible, and not to allow the rubber drainage-tube to dip beneath the fluid in the vessel it connects with.

The error due to reading the meniscus in a reverse position is easily corrected, and in many cases will be eliminated in standardizing the solutions.

I give the simplest form, and one readily made from easily available materials.

If one is somewhat expert in glass-blowing, the end of the large test-tube (or the wide tube used instead) can be drawn out and bent, so that its extremity can be left open for the admission of air. There is some advantage in this in case the volume of the pipette is large, but it is not necessary in every case. — GEO. S. EYSTER, PH.D., *Journ. Chem. Soc.*, V., 218.

* The original paper was not accompanied by an illustration. We have put together an apparatus such as the author describes, and have caused the accompanying cut to be made from it.

ON HESSE'S QUININE TEST.

DR. J. E. DE VRIJ says: "A detailed investigation of different samples of basic sulphate of quinine from German, French, English, and Dutch factories, which I hope soon to publish, has taught me, among other things that, if sulphate of quinine contains *three* or *more* per cent of cinchonidine, its presence is indeed indicated by Hesse's test. [This had been denied by some authorities.] Since *all* specimens of commercial sulphate of quinine contain more than five per cent of sulphate of cinchonidine, not one of them, not even that from Jobst's factory of which Hesse is the technical director, can stand the test if the closed tube is allowed to stand at rest for ten or twelve days, instead of two hours. The ether-layer will then, under all circumstances, contain distinct crystals of cinchonidine."—*Nieuw Tijdsch. v. d. Pharm.*, Feb., 1884.

NOTE by ED. A. D.—Hesse's test was published in NEW. REM., 1879, p. 139, (from *Arch. d. Phar.*). It depends upon the fact that sulphate of quinine is sparingly soluble in water at 50° to 60° C., while the other sulphates are readily dissolved without decomposition, and that, if the cooled solution is supersaturated with ammonia and shaken with just sufficient ether to dissolve the quinine, this quantity will be insufficient to dissolve the other alkaloids, if present to a certain extent. To execute the test, a "quinometer" is necessary, which is a test-tube 10 to 11 millimeters in diameter and 120 *mm.* in height. It is marked at two places, which we will call *B* and *C*, the space from *A* (the bottom) to *B* being 5 cubic centimeters, and from *B* to *C*, 1 *cc.* capacity.

0.5 *cc.* of sulphate of quinine is well shaken, in a large test-tube, with 10 *cc.* of hot water at 50° to 60° C. After setting aside for ten minutes, and shaking, to prevent the sudden expulsion of the mass, the liquid is passed through a small filter, about 60 *mm.* in diameter, into the "quinometer," until the filtrate just reaches the mark *B;* then 1 *cc.* of ether, sp. gr. 0.728 (to mark *C*) is added, and afterwards 5 *cc.* of ammonia water, sp. gr. 0.960. The quinometer is then corked and slowly shaken; the ammonia liberates the alkaloids, and these are taken up by the ether which rises to the top. After *two* hours, the layer of ether should be devoid of crystals, when examined with a lens.

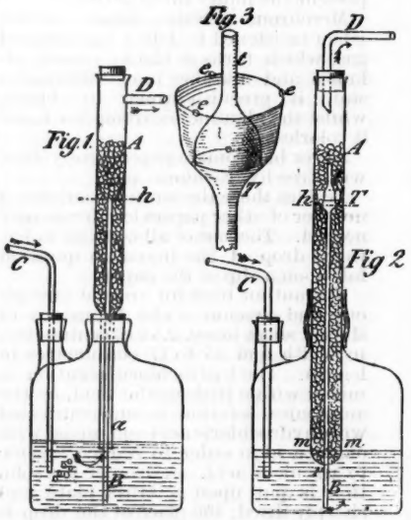
According to Hesse, the absence of crystals, after *two* hours, indicates the absence of more than one per cent of cinchonidine. De Vrij now finds that as much as five per cent and more may be present, and may be detected by allowing the tube to stand for ten or twelve days.

Dr. Vrij adds the remark that a commercial sulphate of quinine containing *as much as eighteen* per cent of sulphate of cinchonidine may pass the test of the Netherlands Pharmacopœia, and such a high percentage need not be considered as an intentional sophistication, but is a necessary consequence of the use of barks yielding cinchonidine in the manufacture of quinine.

GAS-DRYING AND WASHING APPARATUS.

JOH. WALTER recommends a new apparatus for washing and drying gases, which is arranged in the following manner.

One neck of a Woulffe's bottle is fitted with a stopper and glass tube *C* (Fig. 1) for the inlet of the gas. In the other neck is fitted a large glass tube, the lower portion of which is narrower than the upper, and which has a small lateral tube (*D*) fused to it near the upper end. Into the interior of this large glass-tube there is inserted a long funnel-tube and the space below the funnel-part as well as part of the space above is filled with glass beads. These are introduced in the following manner. The funnel-tube is inserted just far enough that its lower end enters the narrower part of the tube *a*. Then enough glass beads are poured in to fill the space up to *h*. The funnel is now pushed down to this part and the rest of the beads poured in on top.



Walter's apparatus for washing and drying gases.

The bottle is filled with the appropriate washing liquid (sulphuric acid, potash-solution, etc., etc.), so that the end of the tube *a* is just a little below its surface. As soon as any gas enters the bottle, the commotion of the liquid exposes the submerged end sufficiently to permit at first the contained air and afterwards the gas to find its way upwards between the two tubes. In its passage it carries up a portion of the wash-fluid which is arrested by the column of glass-beads, while the gas finally passes off in a pure and dry condition through *D*. Of course, the upper end of the tube is closed with a stopper.

Still more effective is the apparatus shown in Fig. 2. In this, the wide glass tube is not contracted, but of uniform diameter throughout. Near its rounded bottom it has four holes, through which the gas finds its way upwards through the glass beads. A central opening *r*, in the bottom, permits the funnel-tube to pass through. The little funnel (Fig. 3) has upon its outer margin three glass beads fused

on to it, by which it is held in an axial position. And a further improvement is obtained by inverting inside of the funnel a smaller one, likewise provided with a few beads at the edge.

This apparatus is suitable for uniform currents of gas, but not for irregular and interrupted currents, because it is necessary to adjust the immersion of the tube *a* in proportion to the pressure of the current.—*Dingl. Polyt. Journ.*, 251, 368.

On the Purity of Commercial Sulphate of Quinine.

DR. J. E. DE VRIJ has addressed a memorial to the Dutch government on the subject of the purity of commercial sulphate of quinine, with a view of opening the eyes of the authorities to the possible frauds which may be committed in the fulfilment of government contracts. He says:

"Although the alkaloids existing, alongside of quinine, in cinchona bark, viz., cinchonidine, quinidine, and cinchonine, all possess an antifebrile power but little inferior to that of quinine itself, and, as a consequence of this fact, the government of British India is now using a compound comprising all the alkaloids under the name "cinchona febrifuge" with great success; yet the majority of practitioners in Java have adhered to the old custom, namely, to use the basic sulphate of quinine. Hence, large quantities of this drug are annually sent to Java, and this is purchased by open competition from time to time.

A few months ago, I discovered that each and every lot of commercial sulphate of quinine contains cinchonidine, and that the quantity of the latter in various lots of quinine derived from German, French, English, and Dutch factories—all examined by me—amounted to between 5 and 18 per cent. I also found that, even when there was present as much as 18 per cent of impurity, the sulphate of quinine responded to the test of the Pharm. Neerlandica. When I had ascertained these facts, I thought it incumbent upon me to familiarize myself with the quality and composition of the lot of sulphate of quinine exhibited by government as a sample to bidders. Having received a sample of this lot from the chief of the Medical Bureau of the Forces, I examined it and found it to contain 12.6 per cent of sulphate of cinchonidine. It follows that, if any contractor furnishes quinine coming up to the government standard, it must be accepted. The commercial value of sulphate of quinine is nearly three times as high as that of cinchonidine. Hence, a contractor who agrees to furnish an invoice containing 12.6 per cent of cinchonidine can make a lower bid than one who agrees to furnish a salt with only six per cent of cinchonidine. In other words, the government encourages the offer of impure quinine by offering such a sample to bid on. At the opening of bids of October 1st, 1883, the government awarded the contract to the two lowest bidders, the lowest bid being 127 florins and 145 florins, respectively, per kilo. At the former price, two lots of 50 kilos each were accepted.

Now, this lot of quinine proved to contain 11 per cent of cinchonidine, while the sulphate of quinine *which the same manufacturer delivers in England* contains only 7.5 per cent of cinchonidine. It is a fact, owing to the presence of much cinchonidine in all manufacturers' bark, that all sulphate of quinine prepared from the latter does and must contain some cinchonidine. It is *not* possible for the manufacturer to furnish quinine free from cinchonidine, but the quantity of the latter left in the former may be kept between perfectly fixed limits."

Dr. de Vrij then makes two recommendation which deserve general attention wherever the supply of quinine is subject to public bid or contract.

1. The award of sulphate of quinine should be made to the lowest bidder, provided the true percentage of pure quinine is made the basis. The bidder is to furnish a sample of what he proposes to supply, of not less than 30 Gm. (1 oz.).

2. Or, the supply of basic sulphate of quinine is to be entirely abandoned, and in its place the acid sulphate—bisulphate of quinine—is to be supplied.

The latter alternative appears to be be preferable, since the bisulphate, by its process of manufacture, *cannot* contain *any* cinchonidine, and can be produced chemically pure on a large scale. Of this, Dr. de Vrij has convinced himself thoroughly. From a medical standpoint, the advantage of the bisulphate lies also in the fact that it is seventy times more soluble in cold water than the basic salt.—*Nieuw Tijdsch. v. d. Pharm.*, 1884, 127.

[It may be that some reason like the foregoing accounts for the recent extensive purchase, for the U. S. Army, of a large quantity of bisulphate of quinine.—ED. AMER. DRUG.]

Sulphate of Cinchonidine.

PROF. J. MARTY, of Rennes, has studied the action of sulphate of cinchonidine and has come to the conclusion that it is of extreme variability of action in healthy and sick persons; and further, that it may easily provoke toxic manifestations in doses necessary to produce therapeutic results.

That sulphate of cinchonidine, when used in excess, acts as a poison is evidenced by a recent case reported by Dr. Williams, of New York, in which a dose of 160 grains was by mistake taken by a patient. The dose was followed by gradual collapse and death.

The Cultivation of Coffee in India.

THE cultivation of coffee is confined to Southern India, although attempts have been made to introduce the plant both into British Burma and into the Bengal District of Chittagong. The coffee tract may be roughly defined as a section of the landward slope of the Western Ghâts, extending from Kánara in the north to Travancore in the extreme south. This tract includes almost the whole of Coorg, the districts of Kádur and Hassan in Mysore, and the Nilgiri Hills, enlarged by the recent annexation of the Wainád. Within the last few years, the cultivation has extended to the Shevaroy Hills in Salem District, and to the Palm Hills in Madura. Unlike tea, coffee was not introduced into India by European enterprise, and even to the present day its cultivation is largely conducted by natives. The Malabar Coast has always enjoyed a direct commerce with Arabia, and yielded many converts to Islam. About 1560, one of these converts, Baba Budan, is said to have gone on a pilgrimage to Mecca, and to have brought back with him the coffee berry, which he planted on the hill range in Mysore still called after his name. According to local tradition, this happened about two centuries ago. The shrubs thus sown lived on, but the cultivation did not spread until the beginning of the present century. The state of Mysore and the Baba Budan range also witnessed the first opening of a coffee garden by an English planter about forty years ago. The success of this experiment led to the extension of coffee cultivation into the neighboring tract of Manjarabod, also in Mysore, and into the Wainad subdivision of the Madras District of Malabar. From 1840 to 1860, the enterprise made slow progress; but since the latter date, it has spread with great rapidity along the whole line of the western Ghâts, clearing away the primeval forest, and opening a new era of prosperity to the laboring classes. The following statistics show the area under coffee for the year 1877–78. In Mysore 128,438 acres, almost confined to the two districts of Hassan and Kadur; in Madras, 58,988 acres, chiefly in Malabar, the Nilgiris, and Salem; in Coorg, 45,150 acres: total, 232,576 acres, exclusive of Travancore. The average out-turn is estimated at about 3 cwts. per acre of mature plant. The total Indian exports (from Madras) in 1877 and 78 were 33,399,352 lbs., valued at £1,355,643, of which about one-half was consigned to the United Kingdom. In 1878–79, the exports amounted to 38,336,000 lbs., valued at £1,548,481.

Considerable judgment is required to select a suitable site for a coffee-garden, for the shrub will only thrive under special circumstances, which it is not very easy to anticipate beforehand. It is essential that the spot should be sheltered from the full force of the monsoon, and that the rainfall, though ample, should not be excessive. The most desirable elevation is between 2,500 and 3,500 feet above sea level. The climate must be warm and damp, conditions which are not conducive to the health of Europeans. Almost any kind of forest land will do, but the deeper the upper stratum of decomposed vegetable matter the better. The site chosen for a garden is first cleared with an axe of jungle and undergrowth, but sufficient timber trees should be left to furnish shade. In the month of December, the berries are sown in a nursery which has previously been dug, manured, weeded, and watered as carefully as a garden. Between June and August, the seedlings are planted out in pits dug in prepared ground at regular intervals; an operation which demands the utmost carefulness in order that the roots may not be injured. In the first year, weeding only is required; in the second year, the shrubs are "topped," to keep them at an average height of about three feet; in the third year, they commerce to bear, but it is not until the seventh or eighth year that the planter is rewarded by a full crop. The season for blossoming is March and April, when the entire shrub burgeons in a snowy expanse of flower, with a most delicate fragrance. Gentle showers or heavy mists at this season contribute greatly to the fecundity of the blossoms. The crop ripens in October and November. The berries are picked by hand, and collected in baskets to be "pulped" on the spot. This operation is performed by means of a revolving iron cylinder, fixed against a breast work at such an interval that only the "beans" proper pass through, while the husks are rejected. The beans are then left to ferment for about twenty-four hours, when their saccharine covering is washed off. After drying in the sun for six or eight days they are ready to be put in bags and despatched from the garden. But before being shipped, they have yet to be prepared for the home market. This is done at large coffee-works, to be found at the western parts and in the interior of Mysore. The berries are here "peeled" in an iron trough by broad iron wheels, worked by steam power; and afterwards winnowed, graded, and sorted for the market.

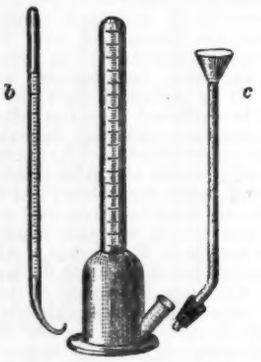
Blaud's Pills.

ACCORDING to the *Chemist and Druggist*, the best formula for making these pills is as follows:

Dried sulphate of iron, and carbonate of potassium, of each, 276 grains; powdered tragacanth, 30 grains; glycerin, 1 fluidrachm or as much more as may be required to make the mass rather soft at first. Make 144 pills.

UREA APPARATUS.

A MODIFIED form of apparatus for estimating urea by means of hypobromite of sodium has been described by W. H. Greene in the *Comptes Rendus* (97, 1,141). Its principal part is the glass vessel *a*, the lower portion of which, of a capacity of about 60 C.c., is provided with an oblique tubulure. Its upper portion is cylindrical, of a capacity of 20 to 25 C.c., and is graduated. When using the apparatus, a suitable quantity of the alkaline bromine solution is poured into the inverted vessel, the latter then turned, set into a dish in which the displaced liquid may run, and a measured quantity of the urine then introduced by means of the curved pipette *b*, the orifice of which should be so fine that only about 3 to 4 C.c. of urine can



flow from it in one minute. The resulting nitrogen collects in the upper part of the tube *a*. When the reaction is finished, the funnel-tube *c* is inserted into the tubulure and enough bromine solution poured into it until the level of the liquids in *a* and *c* is equal. From the amount of nitrogen then present the quantity of urea is calculated in the usual manner. In place of using the funnel-tube, the apparatus (*a*) may be immersed in water until the level of the latter is equal to the level of the inclosed liquid.

Beeswax and its Adulterations.

ACCORDING to Hübl (*Dingler's Polyt. Journ.*, 250, p. 338), the most reliable method of estimating the purity of beeswax is that proposed by Becker, and known as the saponification method.

The quantity of potassic hydrate required to saponify one gramme or 15.4 grains of pure beeswax varies from 97 to 107 milligrammes. Other kinds of wax and its substitutes require in some cases more and in others less of the alkali. This method would, however, lead to very erroneous conclusions if applied to a mixture of which some of the constituents have higher saponification numbers than beeswax and others lower, as one error would balance the other.

To avoid this, the quantity of alkali required to saponify the myricine is first ascertained, and then that required to saturate the free cerotic acid. In this way two numbers are obtained; and in an investigation of twenty samples of Austrian yellow beeswax, the author found these numbers stood to each other almost in the constant ratio of 1 to 3.70. Although this ratio cannot be considered as definitely established by so few experiments, it may serve as a guide in judging of the purity of beeswax.

The experiment is carried out as follows: Three or four grammes of the wax that has been melted in water are put in 20 C.c. of neutral 95 per cent alcohol, and warmed until the wax melts, when phenolphthaleine is added, and enough of an alcoholic solution of potash run in from a burette until on shaking it retains a faint but permanent red color. The burette used by the author is divided in 0.05 C.c. After adding 20 C.c. more of a half-normal potash solution, it is heated on a water bath for three-quarter hour. Then the uncombined excess of alkali is titrated with half-normal hydrochloric acid. The alcohol must be tested as to its reaction before using it, and carefully neutralized with the acid.

To saturate the free acid in 1 gramme of wax requires 19 to 21 milligrammes of potassic hydrate, while 73 to 76 milligrammes more are necessary to saponify the myricine ether. The lower numbers in the one usually occur with low numbers for the other, so that the proportions remain 1 to 3.6 or 1 to 3.8.

For comparison he gives the following numbers obtained with one gramme of the more common adulterants:

	To Neutralize the acid.	To Convert the ether.	Total for Saponification.	Ratio.
Japanese wax	20	200	220	10
Carnauba wax	4	75	79	19
Tallow	4	176	180	44
Stearic acid	195	0	195	$\frac{0}{195}$
Rosin	110	1.6	112	0.015
Paraffin	0	0	0	0
Ceresin	0	0	0	0
Yellow beeswax	20	75	95	3.75

The author deduces the following conclusion as the results of these investigations:

1. If the numbers obtained lie between these limits, 19 to 21, 73 to 76, 92 to 97, and 3.6 to .38 respectively, it may be assumed that the beeswax is pure, provided it also corresponds to beeswax in its physical properties.

2. If the saponification figures fall below 92, and yet the ratio is correct, it is adulterated with some neutral substance like paraffin.

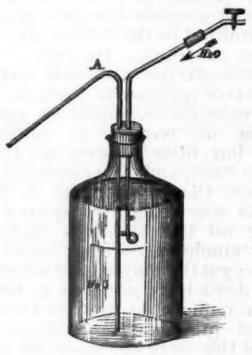
3. If the ratio is above 3.8, it is very probable that Japanese or Carnauba wax or grease has been added.

4. If the ratio falls below 3.6, stearic acid or resin has been used as the adulterant.

GRIFFITH'S MICROSCOPE.

A MICROSCOPE stand with several novel and practical features is the invention of Mr. E. H. Griffith, of Fairport, N. Y. The upright post is made in two pieces, which screw together, and the upper section can be screwed into a table or other support when perfect stability is desired. The lower section forming the foot can be converted into a turn-table for mounting objects, by reversing it upon a pivot that is attached to the case, the balls which serve as feet when attached to microscope become handles for the turn-table. Another peculiarity is the fine adjustment. The milled head seen under the barrel of the microscope in the illustration, turns a rod which has a screw upon it toothing with a cog-wheel on the pivot of the coarse adjustment. There is a simple contrivance for throwing the fine adjustment in or out of gearing, but when in gear, the coarse adjustment cannot be moved independently of the fine adjustment. This is a pretty effectual contrivance for preventing a tyro from forcing the objective against the covering glass. There are other minor features of construction equally novel and practical. Altogether the instrument is well suited for botanical work and will be particularly appreciated by those who wish a compact and serviceable apparatus.

We have to thank Meyrowitz Bros., opticians, corner Fourth avenue and 23d street, N. Y., for the illustration and the opportunity for examining the instrument.



WASH-BOTTLE FOR LIQUIDS INSOLUBLE IN WATER.

AN ordinary wash-bottle is partly filled with the liquid to be used for washing, which should be insoluble or nearly so in water. From a suitable reservoir, a current of water is made to flow into the bottle, under more or less pressure. If the other liquid is heavier than water, it will remain below the latter (this is the condition illustrated in the cut); if lighter, it will float above, and in the latter case the delivery tube *A* will have to be drawn up until its internal outlet is flush with the bottom of the cork.—M. GOLDSTEIN, *Chem. Centralb.*

Hair Trituration.

THE well-known Professor Jaeger, "discoverer of the soul" and advocate of the wearing of woollen clothing exclusively, has "discovered" that the homœopathic attenuation of the human hair is a sovereign remedy for many ills that flesh is heir to, and has applied for a patent, in Austria, upon his "Haarduftkügelchen" (or "hair-odor-granules"). To the human female hair he assigns extraordinary powers. For instance, if it be administered in form of granules, with the food, it will promote appetite and invigorate the system, etc., etc.

To the objection made by the press, that the administration of such a remedy appears nauseous, the author replies: "The idea of disgust is removed by the high dilution. A whole hair in a plate of soup may be considered repulsive, but nobody will object to drink from the lake of Constance if he knows that *one* hair has fallen into it; and this is about the dilution attained in the granules."

Phosphorus Paste

Of great durability may be prepared in the following manner:

Nine Gm. of phosphorus are shaken with 90 Gm. of hot syrup until very finely divided. The mixture is poured, while still warm, into a pan containing 90 Gm. of fine wheat-flour, quickly agitated, and finally mixed with 60 Gm. of bone-black, 60 Gm. of water, and 120 Gm. of lard.—*Pharm. Zeit.*

THE

American Druggist

(NEW REMEDIES)

AN ILLUSTRATED MONTHLY JOURNAL

OF

Pharmacy, Chemistry, and Materia Medica.

VOL. XIII., NO. 8. WHOLE NO. 122.

FRED'K A. CASTLE, M.D., - EDITOR.

CHAS. RICE, PH.D., ASSOCIATE EDITOR.

PUBLISHED BY

WM. WOOD & CO., 56 & 58 Lafayette Place, N.Y.

AUGUST, 1884.

SUBSCRIPTION PRICE per year, - - - - $1.00

SINGLE COPIES, - - - - - - - - - - - - 10

Address all communications relating to the business of the AMERICAN DRUGGIST, such as subscriptions, advertisements, change of Post-Office address, etc., to WILLIAM WOOD & CO., 56 and 58 Lafayette Place, New York City, to whose order all postal money orders and checks should be made payable. Communications intended for the **Editor** should be addressed to THE EDITOR OF AMERICAN DRUGGIST, in care of William Wood & Co., 56 and 58 Lafayette Place, New York City.

The AMERICAN DRUGGIST is issued on the 25th of each month, dated for the month ahead. Changes of advertisements should reach us before the 10th. New advertisements can occasionally be inserted after the 18th.

REGULAR ADVERTISEMENTS according to size, location, and time. Special rates on application.

ELECTROTYPES of the illustrations contained in AMERICAN DRUGGIST will be furnished for 50c. per square inch.

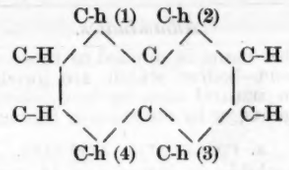
EDITORIAL.

Adulterated Mustard.

THE New York Board of Health has prosecuted a manufacturer of mustard whose product was found to consist of a large proportion of wheaten flour (or other starchy substance), some sulphate of calcium (probably as terra alba), about 25 per cent of mustard, and some [salt of] dinitronaphthol or Martius' yellow, as coloring matter. This latter substance being quite poisonous, the Board has acted wisely and promptly in pressing the charge.

Dinitronaphthol. The coloring matter mentioned in the preceding paragraph is that which is derived from α-naphthol (on this and β-naphthol see NEW REM., 1883, p. 91); β-naphthol also yields a dinitronaphthol of similar properties, but it has not found any practical employment as yet.

Dinitronaphthol (the alpha-α-variety) is α-naphthol, in which *two* hydrogen are replaced by *two* NO_2. Naphthalin, from which all these compounds are derived, may be represented as having the following structure, which shows two benzol-rings joined together:



If *one* of the hydrogens in positions 1, 2, 3, 4 (where *h* is printed) is replaced by hydroxyl (HO), alpha-naphthol is generated. Beta-naphthol would be produced if one of the other hydrogens (H) were thus replaced. If, in the alpha-naphthol, two additional hydrogens are replaced, each by NO_2, we obtain the *di-nitro-naphthol* (the alpha variety, of course).

Dinitronaphthol resembles picric acid and is quite poisonous. It is soluble only with difficulty, and imparts to solvents a light-yellow color. In its nature it is a strong acid. With bases it forms more or less soluble salts: the sodium salt* is in form of reddish-yellow needles, and is easily soluble in water.

The calcium salt† is but little soluble. Both are sold in the market as a yellow crystalline powder for dyeing yellow. They are known as Martius' yellow, Manchester yellow, Jaune d'or, saffron-yellow, etc.

They dye wool and silk without mordants, from light lemon to deep gold-yellow, which is remarkable by its brilliant pure yellow tint, while picric acid always yields greenish tints.

THE withdrawal of the wholesale druggists of this city from their agreement with the N. Y. Druggists' Union, leaves the Campion plan the only regulation in force to govern the sale of proprietary articles. This measure of relief is said to be working very satisfactorily wherever it has been under taken, if we except the cities of New York, Boston, and Philadelphia, where its success is but partial, owing to the fact that these are the places where rate-cutting has become the most troublesome and where the obstacles to reform are naturally the most difficult to overcome.

The one thing which is essential to the success of any scheme, however well it may be planned in other respects, is *local and national organization*, and as the time is rapidly approaching for the meeting of the National Retail Drug Association at Milwaukee, we hope that every retail pharmacist, who has not already done so, will *at once* send his name and dollar to the Secretary, Mr. E. A. Sayre, 416 Myrtle avenue, Brooklyn, N. Y.

The form of application for membership is as follows:

Approving of the objects of the National Retail Druggists' Association, I am desirous of joining it, and hereby signify my approval of its Constitution and By-Laws, and subscribe to the same.

I certify that I am a retail druggist engaged in business on my own account.

Name.....

Address.....

We cannot understand why the national organization should have gained no more than five or six thousand members in its first year of existence. It has been warmly indorsed by every pharmaceutical journal that identifies itself at all with trade interests. So far as we are aware, it has been officially approved by every association of pharmacists which has had the subject before it, and there is hardly a prominent retail druggist in the country who has not spoken or exerted himself in its favor, and yet instead of embracing twenty thousand members, the number is only about 2,500.

* $C_{10}H_5(NO_2)_2ONa \cdot H_2O$

† $[C_{10}H_5(NO_2)O]_2Ca \cdot 6H_2O$

A BEAR once entered unceremoniously a frontier cabin, to the dismay of the man and wife, who were the regular occupants. The man was not long in finding a retreat in the loft above and was enthusiastic in his encouragement of his wife, who seized the poker and drove the bear out. While he was in the loft the man's exclamation was, "Give it to him, Sally!" but when the bear was gone, the door safely barred, and he had come down from his perch, he rubbed his hands, and with glee exclaimed, "Didn't *we* give it to him, Sally?" Some of our friends who are waiting to see what the result will be of all this hubbub about a national organization of the retail druggists before they join it, may supply the moral.

IT is gratifying to learn from the discussion that occurred at a recent meeting of the New York Druggists' Union that the New York and Brooklyn Formulary is receiving the approval of many physicians, and that the work is in great demand, not only in the two cities for which it was primarily intended, but likewise in many parts of the United States. An effort will soon be made, so it is said, to introduce the preparations to the immediate notice of the members of the local medical societies.

IT seems that the suit against Mr. G. Miller, of this city, for his failure to procure a license from the Fire Department to keep combustibles, has been decided against him. The law is likely, therefore, to be enforced, and pharmacists would do well to procure the necessary license without delay. The fee is two dollars.

MR. HENRY C. SCHRANK, the local Secretary of the American Pharmaceutical Association at Milwaukee, kindly informs us that, on the certificate of the *Local Secretary*, the Chi., Mil. & St. Paul, the Chi. & N. W., the Mil. and Lake Shore, and the Wis. Cent. railroads will issue round tickets from Chicago to Milwaukee for one and one-fifth the regular fare, and that the Goodrich steamers leave Chicago every morning and evening, arriving the next evening and morning; the fare bring $1.50 or $2.50 for the round trip, including berths.

WE have long since called attention to the danger to health arising from the use of badly constructed apparatus for dispensing carbonated beverages. The subject has, indeed, been often referred to in pharmaceutical journals, but still there is apparently too little attention paid to this matter by some, for the subject has been deemed of sufficient importance to be investigated by the Boards of Health of New York and Brooklyn. Every man who dispenses "soda" will do well to assure himself by examination that his apparatus does not supply a syrup of verdigris with every drink.

DR. OLIVER'S URINARY TEST PAPERS and Menthol Cones for the relief of headache, are supplied by Messrs. Parke, Davis & Co., of Detroit, in exceedingly convenient and attractive forms. The former is a little pocket-case containing the necessary tests for albumen and sugar, in the shape of slips of paper impregnated with the test solutions. The latter are acorn-shaped cases of hard wood, and upon unscrewing the cup, the menthol is found attached to the body of the acorn in readiness for use. The form of the latter is especially well adapted for the pocket or travelling satchel, and the use of the former is increasing among medical practitioners.

Synopsis of Albuminoids.

BY DR. C. FR. W. KRUKENBERG.*

Native Albuminoids.

THIS class comprises those albuminoid substances which are found, as such, in the tissues and liquids of the living animal body.

A. ALBUMINS.

These are soluble even in highly dilute saline solutions, but insoluble in water in absence of salts. Are not precipitated by very dilute acids or very dilute solutions of the alkali-carbonates, nor by chloride of sodium or sulphate of magnesium. But are precipitated by adding sodium sulphate to their solution saturated at 30° C. with magnesium sulphate. By boiling they separate and are decomposed.

A. Serum-Albumin (C 53.05, H 6.85, N 16.04, S 1.8, O 22.21%) coagulates, in about 1% solution, as free as possible from salts, already at 50° C. The presence of serum-globulin and of salts, however, raises the coagulating point to 72°–75° C.

1. In polarized light, (α) D = −62.6 to −64.6.†
2. Its feebly saline solution is not coagulated by ether.
3. Is precipitated by alcohol, easily soluble in concentrated hydrochloric acid. From this solution, water quickly precipitates acid-albumin.
4. When precipitated or coagulated, is easily soluble in strong nitric acid.

b. Egg-Albumin (C 52.25, H 6.9, N 15.25, S 1.93, O 23.67%) coagulates at about 70° C.

1. In polarized light, (α) D= −37.8°.
2. Is precipitated by ether.
3. When precipitated by ether, is not readily soluble in strong hydrochloric acid. In this solution, water produces a precipitate very difficultly soluble in water.
4. When coagulated, difficultly soluble in strong nitric acid.

c. Muscle-Albumin. Coagulates, in neutral solution, at 47° C.

B. GLOBULINS.

Soluble in dilute solutions of neutral alkali salts (for instance in 10% sodium chloride). Separates from these solutions 1. by heat, 2. by strong dilution with water, 3. by saturation with neutral alkali salts.

a. Myosin. Coagulates at 55° to 60° C.

b. Serum-Globulin (C 52.71, H 7.01, N 15.85, S 1.11, O 23.32%). In polarized light, (α) D = − 47.8°. Coagulates at 69° to 76° C.

C. FIBRINOGENS.

Globulin-like bodies, differing much among each other in their coagulation points. In order to separate all fibrinogens from their faintly saline solutions, and to convert them thereby into fibrin, only the action of certain enzymes or ferments is necessary.

Fibrinogen from the Blood of Mammals.

(C 52.93, H 6.90, N 16.66, S 1.25, O 22.26%.) Coagulates in dilute saline solutions at 55°–56° C. Splits at 58°–60° C. into two albuminoids, one of which (C 52.46, H 6.84, N 16.93, S 1.24 O 22.53%) separates, and is insoluble in water; while the other (C 52.84, H 6.92, N 16.25, S 1.03, O 22.96%) remains in solution.

Albuminates.

This name is applied to those albuminoid bodies which are produced from natural ones by heat, chemical reagents, or by enzymes or ferments.

A. COAGULATED ALBUMINS.

Insoluble in water and in neutral saline solutions, in which they swell up but slightly. But little soluble in solution of soda or in dilute acids.

B. ACID ALBUMINS

Are produced from native albuminoids (also from mucin) by the action of diluted or stronger acids, or by treatment with different salts of heavy metals (as ferric chloride, mercuric nitrate, platinic chloride). Do not coagulate on heating; when carefully neutralized, they are precipitated, and, if freshly prec., are easily soluble in very dilute hydrochloric acid or soda solution. Caustic alkalies convert them into alkali albuminates.

A sharp distinction of the single acid albumins (syntonin, antialbumate, antialbumide, etc.) is at present not yet feasible.

C. ALKALI ALBUMINATES.

If native albumin is treated with alkali, instead of with acid, it is changed in a similar manner. If the change was complete, the alkaline solution does not coagulate on heating. On neutralizing, the albuminoid is completely precipitated. The precipitate, insoluble in water and in neutral solution of chloride of sodium, is easily soluble in dilute acids or alkalies.

In fact, acid albuminates and alkali albuminates are nothing else but solutions of one and the same substance in acids or in alkalies.

D. ALBUMINATES ALTERED BY ENZYMES OR FERMENTS.

a. Fibrins (derivatives of fibrinogen). Fibrin from the blood of mammals (C 52.68, H 6.83, N 16.91, S 1.10, O 22.48%) is insoluble in water and in saline solutions, swells up to a jelly in dilute acids, becomes milky white and brittle when heated to 75° C., as well as by the action of alcohol.

b. Albumins altered by the action of enzymes.

1. *Antialbuminose* is similar in its action to the acid albumins.
2. *Hemialbuminose* is a transition link between albuminoids and peptones.
3. *Peptones* do not respond to some of the albuminoid reactions, and differ from albuminoids also by being diffusible. They retain water with energy, and are soluble in it in all proportions.

On Cochineal Coloring.

WE take the following from a paper on Cochineal and Cochineal Coloring published in the *Chemist and Druggist* of May 15th.

An aqueous infusion (prepared with heat) of about one part cochineal to ten or fifteen of water, and concentrated by evaporation to a proper degree, will answer for the majority of pharmaceutical preparations, as Parrish's syrup, much better than any other colorings into which are introduced chemical compounds which often produce unexpected and generally vexatious complications. For most purposes, however, such a coloring is not bright enough, and recourse is, therefore, had to various means to produce a more brilliant preparation. Practically, by whatever means effected, the resulting liquor is merely a solution of carmine, and the method employed to produce it will probably be determined more by the purposes for which the coloring is required, or by such considerations as convenience or expense, than from any great difference in the resulting product.

Consequently, in making cochineal coloring, we may either proceed to make it from the carmine direct, or we may make a soluble carmine from the cochineal itself. The former is accomplished generally by means of the solubility of carmine in ammonia, and all that is necessary is to digest the carmine in ammonia water sufficient to effect solution, diluting the resulting solution with water, and adding some preserving media, such as spirit or sugar, etc. An old form for a coloring of this kind, and one which gives as good results as can possibly be obtained working in this direction, is as follows:

Carmine, pure, 1 oz.; solution of ammonia, 6 oz. or q. s.; macerate for a few days, with frequent agitation, and, when dissolved, heat gently so as to drive off the excess of ammonia without reprecipitating the carmine. Dilute this solution with water, and add sugar 1½ lbs.; rectified spirit, 4 oz.; water sufficient to make the whole measure 40 oz. The two main objections to all such coloring solutions are, first, the cost of production, it being quite apparent that the initiatory process of producing such a valuable pigment as carmine adds considerably to the expense of the finished product; and, second, the action that all acids have upon them in shortly reprecipitating the carmine.

Proceeding from the crude cochineal, no process is better known, or has been longer in use, than that of digesting with the aid of heat equal parts of cochineal, carbonate of potassium, alum, and cream of tartar with about eight parts of water. The process is so well known that we do not require to give it in full, but, inasmuch as complaints are not infrequent (and this not without cause, as we will immediately show) of difficulties in working the process, as well as in keeping the product, we may be excused for touching upon several details bearing upon these points.

Alum, it is well known, is decomposed in presence of alkaline carbonates, the hydrate being thrown down with evolution of carbonic acid. When, therefore, a solution of cochineal is treated with carbonate of potassium and alum, the hydrate of alumina is liberated and seizes upon the coloring matter, for which it has a powerful affinity, and would ultimately throw it down as an insoluble compound, known commercially as carmine lake, but which might chemically be described as impure aluminum carminate. On the addition, however, of the cream of tartar, brisk effervescence again takes place with resolution of the coloring principle, so that the mixture now contains aluminum carminate in solution, plus certain salts, the products of decomposition. So much for the rationale of the process, without encumbering the explanation with too much chemistry. Now, if instead of working with cochineal, we simply take equal parts of the three salts mentioned, and dissolve them in the proportion of water generally taken in this formula for cochineal coloring, we will find that the resulting liquid, after heating to drive of all carbonic acid, will be feebly alkaline, and, further, that it will be supersaturated with the resulting salts.

Consequently a slight excess of cream of tartar, a circumstance which might happen through carelessness in weighing, or a reduction in the quantity of carbonate of potassium, through excess of moisture or other causes which might be mentioned, will materially affect the ultimate result, so far as an alkaline or acid reaction is concerned. Not only so, but the liquid being supersaturated, will necessarily begin to deposit on cooling, and will continue to deposit with decreasing temperature. The first observation here made, applied to cochineal coloring, affects the shade and depth of col-

---

*Translated and published, with permission of the author, from his recent work: *Grundriss der Medicinisch-Chemischen Analyse.* (Outlines of Medico-Chemical Analysis.) 8vo. Heidelberg, 1884.
This brief synopsis will be of use to many of our readers interested in digestive ferments (pepsin, etc.), or in testing for the presence of albuminoids.
It is only a portion of the original table; the remainder, which treats of *proteids*, being for the present omitted.

† For an explanation of this term, see NEW REM., 1881, 166.

or, etc., of the preparation, while the second observation affects its permanency, the precipitation from the supersated solution of necessity carrying very much of the coloring principle along with it.

[The author next speaks of the necessity of adding some preserving agent, and then quotes the process for preparing cochineal coloring proposed by R. Rother in 1880, with remarks of his own, as follows:]

The process is, shortly, as follows: One part of cochineal is macerated for two days with an eighth part of hydrochloric acid, a fourth part of chloride of sodium, and four parts of water. After being occasionally stirred, the mixture is ultimately decanted. The residue is then treated a second time in the same manner and for the same length of time with plain water, and a third time with the same quantity of water, to which has been added one part of chloride of sodium. The marc is then strongly pressed, and the several macerates mixed and allowed to stand until any sediment has subsided. To the clear liquid is added one-fourth part of alum, and when dissolved, one-third part solution of ammonia (sixteen per cent). The resulting precipitate is thoroughly washed with water, and finally dissolved in a solution of citrate of sodium, made by dissolving one-eighth part citric acid in four parts water, and adding, with the aid of a gentle heat, carbonate of sodium to saturation. The whole is made to measure three and a half parts, and to this one-half part stronger alcohol is added "to obviate septic degeneration."

. . . . . .

Quite unconscious that Mr. Rother had been working in the same direction, we had made a series of experiments, with the view of effecting solution of the impure aluminum carminate of the old process by means of the most suitable vegetable acid. In doing this, we found that citric acid was in every respect the best agent, and in substituting a proper proportion of this acid for the cream of tartar of the old process, we found a product could be obtained at once permanent and satisfactory. We give the process with some degree of confidence as the simplest and best that has yet been given for cochineal coloring: Finest silver-grain cochineal, 1 oz.; carbonate of potassium, 1 oz.; potash alum, 1 oz.; citric acid, ½ oz.; sugar, 4 oz.; water sufficient. Boil the cochineal bruised in a glass or copper vessel of suitable capacity in 8 oz. water, to which the carbonate of potassium has been added. Mix loosely the potash alum and citric acid in powder, add gradually to the boiling liquid, and continue to boil until effervescence has entirely ceased. While still hot filter on to the sugar, and wash the filter with hot water sufficient to make the whole measure 12 oz. This gives a beautiful and permanent crimson with a slightly alkaline reaction; but should a darker red be required, the citric acid may be increased by one-third.

Manaca in Rheumatism.

DR. C. M. CAULDWELL reports having had good success in the treatment of certain forms of rheumatism by fluid extract of manaca.

The effect on man, in health, of the drug—as produced by doses of twenty drops of the fluid extract, administered five times daily for a week—was merely an increase of appetite and a "valerian-like" odor of the urine.

The most satisfactory results were obtained in subacute rheumatism, in which there was little or no rise in temperature.—After *Med. Record.*

Preparation of Crystallized Colchicin.

AFTER Pelletier and Caventou, who first isolated an active principle from colchicum, which they, however, mistook for veratrine, various chemists have investigated the subject.

In Germany, Geiger and Hesse reported having obtained a crystallized substance, the properties of which are, however, very different from that below described.

Later, Oberlin reported that he could never obtain a crystalline "colchicine," even by Geiger and Hesse's process, but that he had extracted from the colchicine a neutral substance, crystallizing with ease, which he termed *colchiceine.*

More recently, Ludwig and Stabler have obtained the same results as Oberlin.

In view of these contradictory statements, a new investigation was undertaken (by the author), and it was found that a "crystalline colchicine" could be prepared by the following process:

Thirty-five kilos of colchicum seed are exhausted with one hundred kilos of ninety-six per cent alcohol. The filtered percolate is deprived of its alcohol by distillation; the remaining extract is agitated several times with its own volume of a five-per cent solution of tartaric acid which separates fatty and resinous substances, while the colchicin passes over into the acid solution.

The latter is decanted, filtered, and agitated with an excess of chloroform which dissolves out the active principle from the acid solution, *without previous addition of an alkali.* On evaporation, crystals are obtained which are impregnated with coloring matter.

These crystals are redissolved in a mixture of equal parts of chloroform, alcohol, and benzin. On a spontaneous evaporation, crystalline colchicin is deposited, which is purified by several similar manipulations.

This method yields about 3 grammes of active principle per kilogramme (that is 0.3 per cent). Colchicum bulb yields only 0.4 grammes per kilo (or 0.04 per cent).

Properties of crystallized colchicin.—The latter appears in form of colorless prismatic groups or masses; it is very bitter, turns litmus paper faint blue, is but little soluble in water, glycerin, or ether, but is soluble in alcohol in all proportions, also in benzin and chloroform.

It is hydrated and melts at 93° C. (199.4° F.); when dried at 100° C. its melting point is at 163 C. (325.4° F.). It is combustible without residue, and contains nitrogen. With certain organic acids it forms compounds, but in contact with others, more energetic, organic, or with mineral waters, it is decomposed.

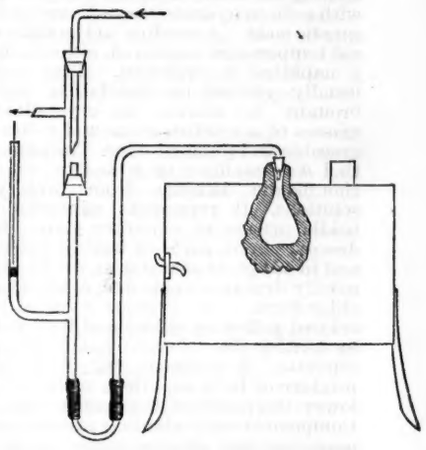
Its solution does not affect Fehling's reagent, except after it has been boiled for a long time with diluted sulphuric acid.

This latter characteristic, taken together with the fact that it forms salts, establishes a resemblance between colchicin and solanine; like the latter [?], the former is an alkali-glucoside.

Reactions. Strong or dilute mineral acids dissolve colchicin and color it lemon-yellow. Nitric acid imparts to it a transient violet color. Potash and soda precipitate its solutions, while ammonia produces no reaction. Tannin causes a white precipitate soluble on heating; platinic chloride causes an orange-yellow, iodine-water a kermes-red, iodide of mercury and potassium a yellow, and iodized iodide of potassium a maroon-yellow precipitate.

[This description will be followed by further statements when the author will have completed further experiments. Among other matters, it will have to be ascertained what relation there exists between this crystalline colchicin and Oberlin's colchiceine.]

According to the preliminary experiments of Dr. Laborde, the activity of the crystalline colchicin manifests itself only in comparatively large doses. For rabbits weighing about 450 grammes, the physiological dose is 0.02 to 0.03 Gm. (nearly ¼ to ½ grain), and the poisonous dose 0.06 Gm. (nearly 1 grain).—A. HONDÈS, *Comptes Rend.*, 1884, 1,444.



WILSON'S THERMO-REGULATOR.

To maintain a constant temperature, Harold B. Wilson devised the arrangement here illustrated, which, though not new in principle, at least has the merit of requiring only ordinary laboratory fittings. The empty flask, which is placed inside the water or air bath, is to be either larger or smaller, according as lower or a higher temperature is to be kept near a constant average. It is connected, air-tight, with a U-tube, the larger portion of which is filled with mercury. Instead of using a continuous glass tube bent at the proper place in the flame, it is better to use straight tubing for the longer pieces, and to attach a short U-piece with stout rubber joints.

When the air inside of the flask becomes expanded, it depresses the mercury in the inner, and raises it in the outer limb, until it cuts off the supply of gas, which passes in the direction of the arrows.

The outer tube bears a lateral branch, into which a piston, made of a knitting needle and a disc of leather, fits. By pushing this down a certain distance, or by raising it up, so as to draw some of the mercury over into the branch, the temperature at which the mercury would otherwise cut off the gas may be varied at any time.—*Zeitsch. f. Anal. Chem.*, 1884, 192.

Liquor Gutta-Perchæ and Chrysarobin.

A 5-per-cent solution of chrysarobin in a solution of gutta-percha is a favorite application for chronic eczema. Auspitz uses a ten-per-cent solution for psoriasis.

[Dr. Morell McKenzie, of London, uses, with success, for such cases a drop or two of nitric acid in a glass of cold water, to be taken in swallows and at short intervals.—ED. AM. DRUG.]

Oil of Turpentine as Antidote for Phosphorus.

HAGER has recently again called attention to the observations of Koehler, who found that it is only the oxygenated portion of *crude* oil of turpentine which enters into combination with phosphorous acid. Since this portion is entirely absent in the rectified oil, it follows that the *crude* oil alone can be regarded as an antidote to phosphorus poisoning.—*Pharm. Centralh.*

Naphthol.

NAPHTHOL is produced from naphthalin ($C_{10}H_8$)* by a substitution of one of the hydrogens by one molecule of hydroxyl (O.H.). According to the position of the hydrogen, two different naphthols are obtained—α naphthol, and β naphthol. The β naphthol ($C_{10}H_7$-O.H) is the one spoken of. The method of its production consists of substitutions by means of strong sulphuric acid at certain temperatures, and melting the monosulphated compound with sodium hydrate, the ordinary dry caustic soda. According to the different temperature employed, either α or β naphthol is produced. They are usually purified by distillation, and brought to market as crystalline masses of a reddish color and a disagreeable and pungent odor. The naphthol β crystallizes in scale-like clino-rhomboidic laminæ from watery solutions. It represents clino-rhomboidic prisms in a molten state. It dissolves in 75 parts of boiling water, and in 520 parts of water at 60° F. It readily dissolves in alcohol, ether, and chloroform. An aqueous solution is colored yellow by chloride of lime and by heating this solution, yellow flakes separate. It melts at 122° C., but a mixture of both naphthols melts at a lower temperature than each alone. Compounds with alkaline metals and ammonia, and alkaline earths are not stable and separate easily either by evaporation or in contact with carbolic acid. The naphthols stand in the same relation to naphthaline as phenol to benzol, and the cresols to toluol.

The crude article contains sulphur and sulphurous acid. The sublimates thereof yield sulphuretted hydrogen, thio-naphtholes, carbolic and cresylic acid, etc., to which it owes its odor. This can be avoided by passing a rapid current of steam through its aqueous solution. The purified naphthol may be then obtained by sublimation, in elegant white crystals.

Its power as an antiseptic and disinfectant was shown by the addition of the drug to 480 parts of urine, which it kept perfectly sweet for upwards of six months, at a varying summer temperature. A similar result was shown by a solution of naphthol in 520 parts of water in which meat was immersed. Putrid solutions lost their odor in twenty-eight hours after the addition of naphthol.

The naphthol, in the form of soap, is valuable for removing the odors of putrefaction from hands and clothes. It is also a very active parasiticide. Naphthol, evaporated by heat, is especially serviceable as a deodorizer in sick-rooms, hospitals, and dissecting rooms.

The drug was taken internally by the writer and two friends, in full doses and continuously for a week, with no untoward symptoms. The symptoms were first heartburn, followed by vertigo, buzzing in the ears, and other symptoms of cerebral hyperæmia. It softened the evacuations; one case had slight diarrhœa. The initial dose was from a quarter of a grain every two hours, pushed to five grains twice daily. It had no effect on pulse or temperature; or the urine, except traces of the naphthol compounds were found in the last on analysis. It is thus proved that the purified odorless naphthol is not a toxic agent, and does not justify the apprehensions of those foreign observers who have recorded various effects of toxæmia produced by the use of the crude drug.

Therapeutically, it will be found of value in scabies, psoriasis, eczema, etc., in which it allays the itching and lessens the infiltration. In wounds and indolent ulcers, it is primarily a detergent and deodorant. It may be used in leucorrhœa and uterine cancer, in aqueous injections, containing half a grain to the ounce. It is a most useful gargle in throat affections, especially if diphtheritic. Its greatest value was found in its disinfectant action on the evacuations of fever patients. It removes the fœtid odor of the feet, when dusted on the shoes and stockings in combination with talcum or starch. In all ointments (1–10 grains to ʒi.) it not only preserves the unguent from decomposition, but exercises an antiseptic action on the parts and the exudation therefrom.

It has the advantage over carbolic acid in being cheaper, odorless (the purified form), and is of far greater efficacy as an antiseptic, and a smaller amount is sufficient.—DR. J. V. SHOEMAKER, in *Journal Amer. Med. Assoc.* (No. 17, p. 501).

*See NEW REMEDIES, 1883, 91.

New Process for Preserving Meat.

MR. RICHARD JONES, who has for many years devoted his attention to the preservation of meat, has now adopted a new process. The principle consists in the injection of a fluid preparation of boracic acid into the blood of the animal immediately after it has been stunned, and before its heart has ceased to beat; the whole operation, including the removal of the blood and chemical fluid from the body of the animal, only taking a few minutes. The quantity of boracic acid used is very small, and that little is almost immediately drawn out again with the blood. The preservation of the flesh is said to be thoroughly effected; the quantity of the chemical left in the flesh must therefore be very small, and can scarcely be injurious to the human system; for, as Professor Barff has proved by experiment, living animals, either of the human or other species, do not seem to be injured in any way by the consumption of it. A demonstration of the effects of the process was given in April at the Adelphi Hotel, London, when the joints cut from a sheep that had been hanging for more than seven weeks at the house of the Society of Arts were cooked in various ways, and those present agreed that the meat was equal to ordinary butcher's meat.—*Scient. Amer.*

The Liquefaction of Hydrogen.

M. OLSZEWSKI recently stated, in the *Comptes Rendus*, that he has liquefied hydrogen by the aid of liquid nitrogen; his previous use of liquid oxygen being unsatisfactory. The nitrogen was compressed to sixty atmospheres, and cooled in a glass tube to −142° C. for a considerable time, by the aid of ethylene evaporating in a vacuum; and in this way was liquefied. The pressure being diminished to thirty-five atmospheres, the nitrogen began to boil with such rapidity that it seemed white and opaque in the upper portions of the tube containing it. If the pressure was maintained at this point the nitrogen ceased to boil; wholly clarified itself; and showed a very pronounced meniscus. The liquid nitrogen, amounting to from three to four cubic centimeters in volume, preserved this condition for a considerable time, slowly evaporating, and producing an increase of pressure in the apparatus. At length its meniscus became less and less distinct; and it finished by completely vanishing when the pressure gauge stood at 39.2 atmospheres; which is, therefore, the critical pressure of nitrogen, when the liquid nitrogen was reduced to the pressure of one atmosphere, it at first rapidly evaporated; but afterward, when scarcely half of it was left, the evaporation slackened, but the liquid itself remained completely transparent, without freezing. The nitrogen did not freeze, even when evaporated under a vacuum; but it was very different when hydrogen contained in a glass tube of about 4.5 millimeters internal diameter was plunged in the liquid. While the nitrogen evaporated in the vacuum, and the pressure of the hydrogen fell from one hundred and sixty to forty atmospheres, the hydrogen was observed to condense into a colorless transparent liquid, running down the sides of the tube. A moment later the exterior surface of the tube was covered with an opaque white coating of the portion surrounded by the gaseous nitrogen, and with a semi-transparent ice on the portion dipping in the liquid nitrogen. This ice and the white coating were evidently due to the nitrogen which thus solidified upon the sides of the tube, prodigiously cooled by the ebullition of the contained hydrogen. The insufficient quantity of liquid nitrogen has not hitherto permitted M. Olszewski to observe the meniscus and critical pressure of liquid hydrogen, but he is convinced that nitrogen, in considerable quantity, boiling in a vacuum, will furnish the only means of liquefying hydrogen to its static condition.

Vesicating Liquids.

AT the meeting of the Société de Médecine Pratique on February 21st, M. Delthil presented a vesicating liquid composed of a solution of cantharides in acetic acid, which offers several advantages over the ordinary plaster masses. It is applied in coats by means of a brush. The first coat produces a rubefacient effect, the second a slight vesication, the third ordinary vesication, and the fourth very great vesication. The advantages of this liquid are numerous: 1st, its action is limited and fixed: 2d, its liquid state enables one to apply it to all parts of the body where its employment may be necessary; 3d, it is more acceptable to patients, and its action is perhaps less painful than that of ordinary vesicants; 4th, it acts more quickly than plasters; 5th, the various effects may be obtained by adding to the number of coats; 6th, its advantages are especially seen when used on children. The action of the liquid may be limited to the desired space by cutting an opening in a piece of cere cloth, as in the application of Vienna paste. Before applying it, the surface of the skin should be washed in warm water, and then rubbed dry and red; after applying the desired number of coats, the spot is covered with wadding.

The Adulteration of Fish Oils.

AT a conference recently held at Vienna, Herr Rössler gave some interesting particulars as to the most recent adulterations of fish oils and the methods of discovering them. It would seem that brown cod-liver oil and white Bergen oil are adulterated with Newfoundland oil. Real cod-liver oil produces with aqua regia (2 parts of hydrochloric acid and 1 part of nitric acid) a liniment of a dark greenish-yellow tinge, which, after half an hour, becomes brown and retains that color. Sea-calf oil, and even a mixture of that oil in equal quantity with cod-liver oil, gives a very light-yellow liniment. This reaction is said to be very characteristic and sufficiently exact for practical purposes.

New Kind of Candles.

M. TRIBALLAT has invented a candle composed of products known as white fatty acids extracted from palm-oil, or other oils. The wicks of these candles do not vary in form from those of ordinary candles, but they are only one-third of the usual size. The light is said to be white and intense. The candles burn a long time, and it is claimed for them that they are both cleanly and economical in use.

A New Reagent for Sodium.

A NEW reagent showing the presence of sodium and sodium salts is described by Dr. Hager (*Pharm. Centralh.*, June 19th, p. 291) which, though subject to several limitations as to its applicability, would seem to give more satisfactory qualitative indications than the flame test in such cases as the examination of potassium carbonate or hydrate. It consists of a solution of *potassio-stannous chloride*, made by dissolving five parts of crystals of chloride of tin in ten parts of distilled water and adding sufficient potash solution, sp. gr. 1.145, to render it nearly, but not quite clear; after standing an hour, five parts more of potash solution and fifteen of water are added, the solution is again allowed to stand for some hours and then filtered. The solution to be examined, if acid, should be made faintly alkaline with pure potash solution, or if decidedly alkaline, neutralized with hydrochloric acid, and any salts of the earth metals should be separated by pure potassium carbonate. Boric acid also interferes with the reaction, and a solution containing sodium borate requires to be mixed with potassium chloride or sulphate before adding the tin reagent. In the presence of any of the salts of sodium the reagent gives, after two or three minutes, a white precipitate or turbidity, even with only minute traces, a fact that should be remembered in preparing it, as caustic potash is seldom quite free from soda. Lithium and ammonium salts seem to behave toward this reagent similarly to sodium salts, except that the reaction with lithium is not influenced by the presence of a borate. As alcohol in the proportion of eight per cent also gives a white turbidity with potassio-stannous chloride, its presence would require to be excluded.—Abstract in *Pharm. Journ.*

Volumetric Determination of Free Nitric Acid.

PROF. A. LONGI recommends to use a volumetric solution prepared by dissolving 40 Gm. of sulphate of tin and potassium in 800 Gm. of diluted sulphuric acid (1 part of acid and 1 part of water), with addition of a little concentrated hydrochloric acid. This solution is standardized by means of ferric chloride and permanganate, and mixed with more diluted sulphuric acid, so that the final solution may contain 11.8 Gm. of tin per litre. This constitutes a decinormal solution.

The liquid containing the free nitric acid is colored blue by a drop of solution of diphenylamine in sulphuric acid, and then titrated with the above test solution, from a burette divided into $\frac{1}{10}$ C.c., until the solution is colorless.—*Gaz. Chim. Ital.*, 13, 482.

Balao or Malapayo Oil.

A RESINOUS oil, baláo or malapájo, is found in the Philippine Islands Sámar and Albáy, probably also in other provinces. It is obtained from a Dipterocarpus* (apiton), one of the loftiest trees of the forest, by cutting in the trunk a wide hole, half a foot deep, hollowed out into the form of a basin, and from time to time lighting a fire in it so as to free the channels through which it flows of obstructions. The oil thus drained is collected daily and comes into commerce without any further preparation. Its chief application is in the preservation of iron in ship-building. Nails dipped in the oil of the baláo, before being driven in, will, as I have been assured by credible individuals, defy the action of rust for ten years; but it is principally used as a varnish for ships which are painted with it both within and without, and it also protects wood against termites and other insects. The baláo is sold in Albáy at four reals for the tinaja of ten gantas (the litre at eight pence). A cement formed by the mixture of burnt lime, gum elemi, and cocoa-nut oil, in such proportions as to form a thick paste, before application, is used for the protection of the bottoms of ships, and the coating is said to last a year.—F. JAGOR, *Travels in the Philippines*, p. 289.

* If the source of the oil is really a dipterocarpous tree, it may perhaps be *Dipterocarpus trinervis* Bl., which is found in the Philippines. The resinous oil would then be a species of Gurjun balsam, although in its uses it coincides with the wood oil of China which is derived from a euphorbiaceous tree, namely, *Elæococca Vernicia* Spreng.—Compare Pharmacographia (2), p. 91.

"Lederine," which would correspond to English "leatherine," is a new coloring matter invented and prepared by Saltzer and Voight in Oker (in the Harz, Germany) and which promises to become of considerable importance. It is said to be free from arsenic and metals and to be very intense and lasting. A yellow and an orange variety are manufactured.

This coloring matter is soluble in *fats* and *oils*, and may be used for coloring pomades, oil, wax, resin, varnish, petroleum ointments, etc. The color is first mixed with a little of the fatty matter and then incorporated with the rest.

Percentage of Caffeine in Roasted Coffee.

ACCORDING to a recent report in the *Allg. Kaffee-Zeitung* (Rotterdam), the percentage of caffeine in different varieties of roasted coffee is, on an average, as follows:

Brazil (Amarello)	3.64
Martinique	3.58
Alexandria	2.52
Java	2.52
Mocha	2.12
Cayenne	2.00

Rancid Castor Oil.

RANCID castor oil can easily be purified in the following manner:—100 lb. of the rancid oil is heated 86 deg. Fahr. in a boiler; then a mixture of ½ lb. of alcohol (96 per cent) and ½ lb. sulphuric acid is added and crutched in. The mixture is then allowed to settle and the oil is drawn off from the impurities which have settled at the bottom. The oil is again washed with water by boiling it uninterruptedly for at least half an hour. The mixture is then allowed to rest until the oil has collected on the surface, when it is carefully removed. Rancid oil after being treated in this way is again fit for use in the manufacture of transparent soap.

Simple Process for Purifying Oils.

ACCORDING to the *Corps Gras Industriels*, oils which hold in solution fatty acids or other substances may be easily purified by the process of Viallis Frères, in being filtered through sawdust impregnated with a solution of soda. If a certain quantity of oil has to be purified, barrels sawn in two can be used, the bottoms of which are pierced with holes. In the bottom is placed a layer of flannel on which a layer of sawdust is placed, six or eight inches in thickness. If a colorless oil is desired, a thin layer of animal black is placed upon the sawdust. By placing two or three of these vats above each other a perfectly pure oil is obtained.

Evil Effect of Beer-drinking.—At a recent meeting of the Medical Society of Munich, Bollinger called attention to the fact that the immoderate drinking of beer causes hypertrophy of the heart.

Artificial Tallow.

AN invention of Miguel de la Vega is spoken of in the *Organ für Oelhandel*, which has for its object the production of artificial tallow and fat from vegetable substances. This artificial tallow is meant for use in the preparation of lubricating substances, in the soap and candle manufacture, etc. The principal ingredient used is castor oil, which forms 60 per cent of the composition; the remaining portion consisting of ten per cent of tallow, ten per cent of rapeseed oil, mustard-seed oil, or cotton-seed oil, etc., and 20 per cent of fine flour. These various components are well mixed, and are then boiled for half an hour by means of steam.

Orthoxysulphite of Phenol is suggested by Laborde, in *Progrès Médical*, as a substitute for carbolic acid (phenol); another name for it is sulphocarbol. It is alleged to be free from the poisonous properties of carbolic acid, to be less odorous, and yet equally valuable for preventing putrefaction and fermentation.

Valerianate of cerium is suggested as a remedy in the vomiting of pregnancy, in place of the oxalate.

Butter may be kept fresh for months in a two-per-cent solution of sulphuric acid, a stoneware or wooden vessel being used as a container.

QUERIES & ANSWERS.

Queries for which answers are desired, must be received by the 5th of the month, and must in every case be accompanied by the name and address of the writer. Unless special instructions to the contrary accompany the query, the initials of the correspondent will be quoted at the head of each answer.

When asking for information respecting an unusual or proprietary compound, always accompany the query with all the information you may possess respecting it, and, when it can conveniently be done, send a specimen of the label.

No. 1,313.—**Pharmaceutical Registration** (F. L. C., Vernon Centre, N. Y.).

By referring to the text of the new State pharmacy law which appeared in our last issue, you will find the information you desire.

No. 1,314.—**Bromine Vaporizer** (M. G., Vt.).

Parke, Davis & Co., of Detroit, Mich., are the agents in this country for the sale of the bromine vaporizer patented by Dr. Franke, of Charlottenburg, Germany. They also have the solidified bromine and will be pleased to answer any inquiries you may address to them on the subject.

No. 1,315.—**To Make Labels Adhere to Tin** (C., M.D.).

This correspondent says he has tried many proposed methods for accomplishing this, but has failed.

Let him try one of the following:

1. Wipe the place where the label is to be with a few drops of solution of soda or potassa, and then with a wet cloth. Then attach the label with mucilage containing a small percentage of glycerin, or with starch-paste.

2. Brush a little oleate of mercury (liquid) over the place, then apply a drop or two of solution of potassa, and wipe clean with a damp or wet rag. Attach the label as before.

3. Brush a thin streak of antimony trichloride (butter of antimony) over the spot, wipe it off and attach the label.

4. Roughen the place slightly with

fine emery paper, wipe it clean, and attach the label. We generally trust to this latter method more than to others.

The trouble experienced when precautions like the above are omitted is probably owing to the fact that the surface of tin-plate is greasy.

No. 1,316.—**"Safe Remedies"** (P.).

In our June number, p. 118, we gave what purports to be a close imitation of the nostrum you inquire about.

The composition of the other compounds you mention is not known.

No. 1,317.—**Mead** (L. S.).

We published an extensive series of formulæ for summer drinks in NEW REM., 1882, p. 182. From time to time we shall republish some of these, with such improvements as may have come to our knowledge. The formulæ desired by you are as follows:

Mead (Metheglin).—Water, 10 gallons; lemons, 2, cut in slices; honey, 2 gals.; ginger (dry), a handful. Mix together and boil for half an hour, carefully skimming all the time. While boiling, add 2 oz. of hops. Remove from the fire, and, while the liquid is luke-warm, add strong yeast, and put into a cask to work for about 3 weeks, when it will be fit for use.

Another Formula.—Water, 1 gallon; strained honey, 3 lbs. Boil about half an hour, adding ½ oz. hops; skim carefully and drain the skimmings through a hair-sieve, returning what runs through. Remove from the fire, and when the liquid is lukewarm, stir into it ½ pint of yeast, which is sufficient for 9 gallons of mead (to which quantity it may be made up by the addition of water). Put into a cask and let it work until fermentation subsides. Put a strong paper over the bung-hole. This mead may be flavored with spices while boiling, and makes a delicious summer drink.

No. 1,318.—**Parts by Weight in making Tinctures** (T. S. E.).

The new pharmacopœia has abandoned the use of all measures, except in the case of fluid extracts. Hence, in directing, for instance, under Tincture of Arnica, that

20 *parts* of Arnica Flowers should be made into

100 *parts* of Tincture, it is understood that both of these quantities are to be weighed. It is only necessary to substitute for "parts" any optional definite weight, as for example "drachms," or "ounces," or "pounds," or "grammes," or "kilogrammes." Let us say avoirdupois ounces. Then the directions will be, briefly, the following:

Weigh 20 av. oz. of Arnica Flowers, moisten them with 40 av. oz. of diluted alcohol [this being made by mixing equal parts, by weight, of alcohol and water], pack in a percolator, and pour enough diluted alcohol on top until 100 av. oz. of tincture are obtained.

For this purpose, a bottle of sufficient capacity to hold the 100 av. oz.—say a 1 gallon bottle—is carefully tared, and then placed under the percolator. After a sufficient amount of liquid has accumulated to come apparently near the required quantity, the bottle is occasionally weighed, until the contents are just 100 av. oz.

Since almost all alcoholic tinctures have a lower specific gravity than water, it is safe to allow as much liquid to accumulate, without weighing, as would equal the weight of 100 av. oz. of water. That is, 100 av. oz. *of water* may be weighed in the gallon bottle, the level of the liquid marked outside, then the water emptied, and the tincture collected in the same bottle. It will not be necessary to control the weight of the percolate before the volume of the latter has reached the mark for water, except in the case of tinctures which are heavier than water.

Where many percolations, by weight, have to be performed, and it is desirable to save frequent weighings, mechanical appliances may be used which stop the flow of the percolate as soon as the desired weight of liquid is in the bottle. These appliances also permit a percolation to be continued over night, and without being watched, since the flow is stopped automatically, as soon as the desired weight of liquid is obtained. We shall have occasion to describe some of these appliances shortly.

No. 1,319.—**Three Colors in one Show Bottle** (C. A. S.).

For bottom layer, glycerin may be used, or colorless glucose syrup, or any other colorless liquid of high specific gravity. These may be colored by chromic acid, picric acid, indigo-blue, caramel, or some aniline color. The middle layer may be water, for the coloring of which any water-soluble color may be chosen. The kind of color depends upon the individual taste of the interested person. For top-layer, oil of turpentine or naphtha may be selected. But it should be remembered that both of these liquids, *and their vapor*, are highly inflammable; hence the close proximity of a gas light, as is customary with show-bottles, involves a certain amount of risk.

A better plan is, as our correspondent indicates in his note, to use turpentine as middle layer and alcohol as top layer.

Sometimes we find that cudbear and alkanet are recommended for coloring the turpentine. The coloring matter of the former, however, is nearly insoluble in the liquid, and the latter only slightly soluble. It is much better to use a resinous substance such as dragon's blood, or one of the vegetable oleoresins, which are quite resisting to day-light, as, for instance, oleoresin of capsicum, which imparts a reddish to reddish-yellow tint; oleoresin of male fern, which imparts a greenish tint. A nice tint of more permanence may also be produced by proceeding as follows: Dissolve sandarac in solution of potassa, diluting with water and precipitate with a solution of acetate of copper. Wash and dry this precipitate, and dissolve it in the oil of turpentine.

To color the alcoholic layer is an easy matter and will require no suggestion on our part.

No. 1,320.—**Fluid Extracts by Repercolation** (H. C. W.).

In previous issues of this journal (f. i., NEW. REM., 1879, p. 1), you will find the process of preparing fluid extracts by repercolation minutely described. You will likewise find a description in the latest issue (fifteenth ed.) of the U. S. Dispensatory, page 582.

No. 1,321.—**Restoring Rancid Butter** (Ch. G.).

Rancid butter may be restored, or at least greatly improved, by cautiously melting it over a water-bath, or with steam (at as low a heat as possible), and mixing it with some *fresh-burnt* and *coarsely* powdered animal charcoal, which must have been very carefully freed from all fine dust by sifting, and afterwards straining it through flannel.

Another less troublesome method, said to be even better, is to wash (knead) the butter first with some good fresh milk and then with cold water.

No. 1,322.—**Text-book on Organic Chemistry** (J. L. T. D.).

This correspondent asks us to name a work on organic chemistry more elaborate than the usual text-books, and specially adapted to the wants of the pharmacist.

In reply, we would say that there is probably no single work in existence which fully covers the wants of our correspondent, at least in English. By consulting, successively, the latest editions of Fownes, Attfield, Mott, Pinner (by Austen), Wurtz (by Green), Wöhler, Remsen, and Roscoe and Schorlemmer (the work of the last-named authors is not yet complete), you will probably find all the information desired. If analytical information is desired, you may consult Prescott's Organic Analysis, Allen's Commercial Analysis, Hoffmann's Handbook, etc.

The work which of all others comes nearest to our ideal of a comprehensive treatise on pharmaceutical chemistry, particularly for self-study, is that by Dr. Ernst Schmidt, of Halle: *Ausführliches Lehrbuch der Pharmaceutischen Chemie*, 2 vols. Braunschweig, 1880–1882. A briefer work, but likewise of first-rate importance, is that of Prof. Flückiger: *Pharmaceutische Chemie*, a new edition of which is in preparation.

Of text-books on physiological chemistry, the latest and best are those of Hoppe-Seiler (of Strassburg), the late Gorup-Besanez (of Erlangen), and Hoffmann (of Vienna). For methods of physiological analysis, we can highly recommend the recent work of Dr. Krukenberg: *Grundriss der medicinisch-chemischen Analyse*. Unfortunately, there is no modern treatise on physiological chemistry in existence in English which could pretend to be as comprehensive and authoritative as the works above named, though we have information that a work of the kind is in course of preparation.

No. 1,323.—**Rubber Cement** (O.).

Rubber may be cemented to iron by the following method.

Mix one part of powdered shellac with ten parts of strongest water of ammonia, and shake the mixture occasionally during three or four weeks, keeping it well stoppered, until it becomes liquid, when it will be ready for use. Apply a coat of the solution to the surface of the rubber which is to be cemented. This will cause the rubber to soften, but it will become hard again when the ammonia evaporates. While the rubber is soft, apply it to the substance—glass or metal—and exert a steady pressure. It will then become firmly attached to it.

Another good cement for this purpose is marine glue, which we have repeatedly described.

No. 1,324.—**To Cover the Odor of Tar** (C., M.D.).

This correspondent has tried various essential oils to cover the odor of tar, but without success.

The odor cannot be entirely covered, but it can be greatly modified and deprived of much of its disagreeable character by oil of mirbane (artificial oil of bitter almonds).

No. 1,325.—**Abrus Precatorius** (M. D.).

The only detailed paper treating of the pharmacognosy of the seeds of this plant which has come to our notice is by Wladimir Tichomirow and is contained in the *Bulletin de la Société Imp. des Naturalistes de Moscou*, 1883, No. 3, p. 133, "Paternoster-Bohnen," etc.

No. 1,326.—**Constituents of Genuine Sherry** (W. & Co.).

There is no wine which has at all times a uniform and constant composition. While this is true of natural, unmanipulated wines, it is of course much more so of fortified (brandied) wines, such as sherry. Nevertheless, there is a certain mean between the upper and lower limits, which probably varies but little from the figures below given. These represent the composition of a sample of "genuine sherry" analyzed by E. List (in *Arch. f. Hyg.*, 1,500).

Spec. Gr. at 15° C.....	0.9875
Alcohol, per cent by weight	17.21

Extract, calculated	3.64
" as weighed	3.75
Ash	0.232
Alkalinity of latter in cubic centimeters of normal acid	1.6
Phosphoric Acid	0.0319
Sulphuric "	0.0219
Potassium Sulphate	0.0476
Acidity in cubic cent. of normal alkali	0.85
Acidity, easily volatile, do.	0.15
Acidity, as tartaric acid	0.6375
Glycerin	0.914
Polarization (Wild)	1.66
do., after inversion	1.66
Chlorine	scarcely traces

No. 1,327.—**Assay of Liebig's Extract of Beef** (Corm.).

The Hygienic Institute of Munich some time ago published a method for the assay of extract of beef, which it recommends for general adoption by analysts, in order to bring about some uniformity and to permit comparisons between different analyses. The method is quite simple, and deals with the determination of the ash, the water, and the proportion of extract soluble in eighty-per-cent alcohol; it also takes into account the physical condition and flavor of the extract.

The determination of the water insures the proper degree of concentration; the quantity of ash must correspond to the natural amount of ash in meat-juice; and the alcoholic extract, after making allowance for the ash and water, permits the estimation of gelatin and other substances insoluble in alcohol.

1. *Determination of ash.* About 1 Gm. of the extract is slowly incinerated in a platinum or thin porcelain crucible until a white ash remains.

The presence of *added* chloride of sodium can be immediately ascertained by the proportion of the ash to the figures obtained in the subsequent operations.

2. *Determination of water.* About 2 Gm. of the extract are dried during thirty-six hours at 100° C. (212° F.).

3. *Determination of alcohol-soluble matters.*—About 2 Gm. of the extract are weighed in a beaker-glass and dissolved in 9 C.c. of water. This concentrated aqueous solution is mixed with 50 C.c. of alcohol of 93% (Tralles) [or 49 C.c. of U. S. Ph. alcohol], which produces a copious precipitate which adheres firmly to the sides of the beaker. The clear alcoholic solution is then poured off into a tared capsule and evaporated at about 70° C. (158° F.). The precipitate is washed with 50 C.c. of alcohol of 80%, the washings evaporated in the same capsule as the first alcohol extract, and the residue finally dried during six hours, at 100° C. (212° F.).

The *ash* may vary between 22 and 25%; the *water* between 16 and 21%; the alcoholic extract between 56 and 65%. The outside and mean figures obtained in 170 assays were the following:

	Ash.	Water.	Alc. Extr.
Maximum,	25.2	21.8	64.9
Minimum,	22.3	16.4	57.3
Mean,	23.02	18.79	61.85

No. 1,328.—**Chloride of Potassium** (O. J.).

The use of *chlorate* of potassium as a gargle in certain affections of the mouth or throat depends to a great extent upon a misapprehension, although it is now acknowledged that the chlorate acts, in many cases, equally well. Many years ago, some German practitioners recommended *kalium chloratum* for this purpose, and this was mistranslated in English, by *chlorate of potassium*, while it should have been *chloride of potassium*. The chemical formula of the former is $KClO_3$; that of the latter KCl. The former contains oxygen, and has different physiological effects from the latter. Whether it ever can act as a supplier of oxygen, when taken internally, is highly problematical, though often supposed to act as such. Chloride of potassium is free from oxygen, and non-poisonous in ordinary doses, while the chlorate has not infrequently caused toxic effects. Chlorate of potassium requires about sixteen parts of water for solution, at 15° C. (59° F.) the *chloride* only a little over three parts.

No. 1,329. — **Corrosive Sublimate Gauze** (U. S.).

In the practice of a good many surgeons, and in some hospitals of this country, this antiseptic gauze is made by immersing *bleached* absorbent muslin in a solution of

Bichloride of mercury	20 parts.
Glycerin	500 "
Water	4,480 "

for about half a day, then wringing out and allowing to dry as far as the glycerin will permit.

Metallic instruments cannot be dipped into this solution, as they will be coated with a layer of mercury, or, in other words, will become amalgamized.

No. 1,330.—**The New French Pharmacopœia** (Dr. B. W. B.).

Hitherto we have only given a few extracts from this work, because its use in *this* country is very limited and its preparations are but seldom demanded. However, such articles and preparations as appear to be of general interest, will be laid before our readers as occasion may require.

No. 1,331.—**Elixir Dentifrice** (Codex).

	Parts.
Oil Cinnamon	1
Oil Staranise	2
" Cloves	2
" Peppermint	8
Tinct. Benzoin	8
" Guaiac	8
" Pyrethri	8
" Cochineal	20
" Alcohol, 80%	1,000

No. 1,332.—**Eau de Cologne** (Codex).

The old formula was:

	Parts.
Oil Bergamot	100
" Lemon	100
" Cedrat	100
" Lavender	50
" Neroli	50
" Rosemary	50
" Cinnamon	25
Alcohol, 90%	12,000
Spirit of Melisse (Eau de Carmes)	1,500
Spirit of Rosemary	1,000

Spirit of Melisse (Eau des Carmes) is thus prepared:

	Parts.
Melissa, fresh in flower	900
Lemon peel	150
Nutmeg	80
Ceylon Cinnamon	80
Coriander	40
Angelica Root	40
Alcohol	5,000

Macerate four days, then distil off 4,250 parts.

The formula in the new Codex is:

	Parts.
Oil Bergamot	10
" Portugal	10
" Lemon	2
" Neroli	2
" Rosemary	2
Alcohol	1,000

Dissolve and filter.

No. 1,333.—**Eno's Fruit Salt** (Joliet).

This is said to be composed of Rochelle salt 3, tartaric acid 24, bicarbonate of sodium 30, powdered sugar 30 parts, and is flavored with lemon.

No. 1,334.—**Bleaching Starch** (N. Y. V. C.).

We were not aware that any bleaching-process was ever applied to starch, or that it is necessary, inasmuch as it only needs to be properly separated from gluten and other substances, to appear perfectly white. Just where the trouble is with the sample you sent us we are unable to say, but that it can be made whiter there is no doubt in our mind. Artificial bleaching matters, such as chlorine, permanganate, sulphurous acid, etc., would be useful (theoretically at least), if the color were due to an adherent coloring-matter, but it seems to be due to an admixture of a characteristically tinted impurity.

Probably, by consulting the best modern works on starch manufacture, you will hit upon the cause of the trouble. Such works are: Muspratt's Chemistry, vol. ii., article "Starch" (or the same work in its recent enlarged German edition, by Stohmann); also: Rehwald (Felix), Die Stärke-Fabrikation und Fabrikation des Traubenzuckers. 8vo. Wien (Hartleben).

No. 1,335.—**Neutralizing Cordial** (C. E. T.).

Neutralizing Cordial is the *Syrupus Rhei* of the U. S. Pharmacy of 1880. That of 1870 was merely a mixture of the fluid extract of rhubarb and syrup. The new syrup, however, contains carbonate of potassium and cinnamon, the proportions being: rhubarb, sliced, 90 *parts;* cinnamon, bruised, 18 *parts;* carbonate of potassium, 6 *parts;* sugar, 600 *parts;* water enough to make 1,000 parts.

No. 1,336.—**Universal Putz-Pomade** (Subscr.).

Notices on the composition of this have appeared in this journal, NEW REMEDIES, 1883, pp. 213, 249, and 283.

One correspondent says it consists of Armenian bole and enough oleic acid to form a paste, and enough artificial oil of bitter almond to impart odor.

Another gives the composition as: rotten stone (levigated), 1 part; subcarbonate of iron, 3 parts; lard or olive oil, enough to render the product of the consistence of lard, with some oil of bitter almond.

Gawalovsky says that Mendl's preparation consists of fatty acids, 54 per cent; oxide of iron, 10 per cent; powdered pumice stone, 32 per cent; and water and oil of mirbane, 3.66 per cent.

Different manufacturers, though using similar ingredients, naturally turn out varying products.

No. 1,337. — **State Pharmaceutical Associations** (S.).

As a supplementary answer to question 1,301 in our last June number, we append the following list of the names and dates of organizations of twenty-nine State Pharmaceutical Associations founded previous to 1884 (taken from a circular issued by the Executive Committee of the Kentucky Pharmaceutical Association).

California		Ohio	1879
New Jersey	1869	N. Carolina	1879
Mississippi	1869	Iowa	1879
N. Hampshire	1873	Illinois	1879
Rhode Island	1875	Kansas	1880
Vermont	1875	Wisconsin	1880
Tennessee	1875	Alabama	1881
Maine	1876	Missouri	1881
S. Carolina	1876	Virginia	1881
Georgia	1876	West Va	1882
Connecticut	1876	Indiana	1882
Kentucky	1877	Louisiana	1882
Pennsylvania	1878	Massachusetts	1882
New York	1879	Michigan	1883
Texas	1879		

No. 1,338.—**Phosphate of Calcium and Volatile Oils** (S. M. P.).

As a rule, the same amount of precipitated phosphate of calcium may be used as of carbonate of magnesium, which was formerly more commonly used. It takes about twice as much phosphate, by weight, as there is of volatile oil. The function of the phosphate (or carbonate) is not only to

facilitate the subdivision of the oil by trituration, but also to help to stop up the larger pores of the filtering paper when filtering, so that the liquid may run through clear.

No. 1,339.—**Lime-Juice; its Clarification and Preservation** (N. E. V. C.).

Lime-juice may be clarified by heating it, either alone or mixed with a small quantity of egg-albumen, in a suitable vessel, without stirring, to near the boiling point of water, until the impurities have coagulated and either risen to the top or sunk to the bottom. It is then filtered into clean bottles which should be completely filled and closed (with pointed corks) so that each cork has to displace a portion of the liquid in order to be inserted. The bottles are sealed and kept at an even temperature (in a cellar). In this way the juice may be satisfactorily preserved.

No. 1,340.—**New York and Brooklyn Formulary** (Kansas and New Orleans).

You may obtain this work from the College of Pharmacy of the City of New York, 209 and 211 East 23d street. The price is 50 cents plain bound; 65 cents interleaved; 25% discount on ten copies or more. We advise an interleaved copy for entering notes.

By the way, we may mention that steps are being taken to make the committee which published the Formulary a permanent one. The German Apothecaries' Society has already permanently extended the term of the committee appointed by it, and has selected as members Messrs. Rice, Meumann, Schleussner, Louis, and Ramsperger.

At the next meeting of the Kings County Pharmaceutical Society, and of the College of Pharmacy, similar action will no doubt be had.

No. 1,341.—**Gelatin-Coating of Pills** (Exc.).

At a recent meeting of the Massachusetts State Pharm. Assoc., Professor Edgar L. Patch read a paper on Pill Coating, from which the following is taken, which refers to gelatin-coating:

"Gelatin alone is slowly soluble in water, first swelling, then dissolving; so its solubility should be increased by the addition of some other body. Acacia, sugar, glycerin, acetic acid, are among the substances recommended. If the last three are added in quantity sufficient to secure solubility, the coating dries very slowly. The acid is volatilized by the heat, and the composition of the coating soon altered.

"After trying many such mixtures I have settled upon the following as giving the best results in the greatest number of cases, the coating being quite as soluble, if not more soluble, than any so-called soluble coatings of the market:

"Best French gold-labelled gelatin, 2½ ozs., avoirdupois; distilled water, 7 fluid ozs. Macerate until the gelatin softens, dissolve by water-bath, add powdered boric acid, 2 drachms; then slowly add mucilage of acacia, U. S. P., 1880, 2 fl. oz., and strain.

"Much of the success of the process depends upon having the solution of droper density; the thinner it is the better, provided it furnishes a complete and firm coating when dry.

"Of course the warmer the solution the more rapid the drying; but judgment must be exercised in regulating the temperature to the case in hand, just as we regulate the quantity and quality of the excipient employed in pill-making by the nature of the ingredients of the mass.

"If the solution is too warm it may soften and destroy the form of the pill; or in cooling, the gelatin may contract and split or crack.

"Pills consisting largely of aloes and the various gum resins, or of solid extracts, should be made very hard and dipped in thin, comparatively cool solution.

"If dipped in too warm solution the pills will soften, and when the gelatin cools the contraction will cause the softened mass to shoot out of the needle hole. Being dipped in cooler solutions, it of course requires more time for such pills to dry.

"Pills containing carbonate of ammonium, citrate of iron and quinine, and other scaled salts, valerianates, acetates, alkaline iodides, etc., should also be dipped in cool solution.

"Pills designed for coating should always be made as hard as possible, and the use of *glycerin* as an excipient should be avoided, as it has a tendency to soften the coating.

"*Glucose* forms a good general excipient for pills to be coated, being used alone with quinine, and with the addition of a little powdered extract of licorice in dark pills, if need be.

"If the solution has been properly made and it subsequently thickens, a little distilled water should be added from time to time.

"To prevent adhesion to the needles the latter should be greased with a little petrolatum.

"A convenient way of accomplishing this is to have a pad saturated with the petrolatum, into which the needles may be thrust at one time.

"The excess of gelatin taken up by the pills should be removed by touching to the under heated surface of the lid and cover.

"A common mistake consists in piercing the pills too deeply with the needles and then subsequently dipping the pills too deeply into the solution.

"The needles should be thrust into the pills just far enough to prevent their coming off, and the pills should be dipped into the solution just deep enough to barely cover them."

Formulæ Asked for.

1. What is the composition of Longueville's *Gestiano*.
2. *Marshall's Cubeb Cigarettes.*
3. *Fluid Magnesia*, similar to Dunbar's.

BIBLIOGRAPHY.

Ueber das Schicksal des Caffein und Theobromin im Thierkoerper. Nebst Untersuchungen über den Nachweis des Morphins im Harn. (Inaug. Dissert.). Von Richard Schneider. 8vo. Dorpat, 1884.

[Caffeine is completely and rapidly absorbed from any part of the intestinal canal; if given in small doses, it is all decomposed and not traceable in the urine; in doses of over about 0.5 Gm. (8 grains), a portion passes off in the urine. If diuretics are used, even small doses are carried off through the urine. No caffeine appears in urine after partaking of usual quantities of tea or coffee. Theobromine behaves like caffeine, though it is less easily decomposed.]

Drugs and Medicines of North America. A quarterly, etc. (see our May number, page 96). By J. U. Lloyd & C. G. Lloyd, Cincinnati, 1884. Number 2.

Of this excellent publication the second number has reached us, and even a cursory glance will convince the reader that the authors have left no stone unturned to bring their work as near completeness and perfection as possible. The literary references in this number are given with much greater minuteness and fulness than in the first number, and this enhances the value of the work very materially. In fact we are very glad that the authors have made this improvement already in the second number.

The present number concludes the account of Anemone patens and brings that of Hepatica which is full of interest, and part of that of Ranunculus bulbosus. The text contains a notable amount of new contributions to the chemistry of the drugs not heretofore known, and of much interest and importance.

Die Französische Pharmakopöe vom Jahre 1884. (Von Dr. Bruno Hirsch). Reprint from *Pharmaceutische Centralhalle*, 1884.

[This is a critical and very detailed review of the new French Codex, written by one of the most competent authorities. We have already mentioned that the French Codex is comparatively of little importance in this country, being used but sparingly, and that only in certain cirumscribed sections of the country.]

Poisoning by Cannabis Indica: Two Drams of Herring's English Extract Indian Hemp being Taken without Suicidal Intent. By A. B. Cook, A.M., M.D. (Reprint from *Am. Practioner.*)

[The most efficient agent for overcoming the remarkable and alarming symptoms of poisoning noticed in this case was the battery, and the author expresses his opinion that this is probably the most reliable agent in all cases of poisoning by narcotics.]

Bergholz (Alexander). Ein Beitrag zur Kinogerbsäure. 8vo. Inaug.-Dissert. Dorpat, 1884.

A Dictionary of the Action of Heat upon Certain Metallic Salts. Including an Index to the Principal Literature upon the Subject.

Compiled and arranged by J. W. Baird, M.A., Ph.C.; Contributed by Prof. A. B. Prescott. 8vo. N. Y., 1884. (Reprint from *Journ. of Am. Chem. Soc.*)

Eighteenth Annual Catalogue of the Massachusetts College Pharmacy. 8vo. Boston, 1884–85.

Einige Praktische Ergebnisse meiner Untersuchungen ueber das Chlorophyll der Pflanzen. Von Dr. A. Tschirsch, of Berlin. 8vo. [Some Practical Results of my Investigations on the Chlorophyll of Plants.] (Reprint from *Arch. der Pharm.*, 1884.)

Haussner (George). Ueber Minyak-Lagam. Zur chem. Kenntniss der Balsame aus der Fam. d. Dipterocarpeen. 8vo (Inaug. Diss.), Erlangen, 1884.

Noter (R. de). Arbres fruitiers et Plantes officinales exotiques à acclimater en Algérie. 8vo, pp. 39. Algiers, 1884.

(On cultivation of foreign officinal plants in Algiers.)

Ralfe (C. H.). Clinical Chemistry (Analysis of Blood, Urine, Morbid Products, etc.). 8vo, London. 6 sh.

Sigismund (Dr. Reinh). Die Aromata in ihrer Bedeutung für Religion, Sitten, Gebräuche, Handel und Geographie des Alterthums. 8vo, Heidelberg. *m.* 2.50.

Strasburger (Dr. Ed.). Das Botanische Practicum. Anleitung zum Selbststudium der mikroscopischen Botanik. 8vo, Jena, 1884. (182 illus.) 15 *m.*

(Guide to Self-instruction in microscopical Botany.)

Henry Watts, the eminent English chemist, author of the voluminous Dictionary of Chemistry, editor of the English edition of Gmelin's Chemistry, and editor of the later editions of Fownes' Chemistry died on June 30th.

ASSOCIATION AND COLLEGE NOTES.

American Pharmaceutical Association.—The following call has been issued to every member:

DEAR SIR:—We address you in the interest of the American Pharmaceutical Association, of which you are a member. The subject of papers and queries is an important feature of the organization, and by means of this department many facts valuable to the scientific world have been yearly brought forward. We hope the coming meeting will be of special interest in this direction, and we address you direct and earnestly, urge you to contribute, either a paper on some interesting subject, or the subject for a query regarding some substance that deserves investigation.

In connection with this matter, we feel that we need not hesitate to say that in no other manner can a paper be so forcibly presented to pharmacists and the scientific world. The reports of our meetings are standard authorities. The papers read and discussed by us are published in the pharmaceutical journals of our country. In contributing to our society, you will not only aid the interest of our meetings, but the general advancement of pharmacy.

Please address your communications to J. U. Lloyd, Cincinnati, Ohio, at as early a date as possible.

In order that the meetings progress without interruption, it is necessary that the papers be early in the hands of the committee, and they should be forwarded at least two weeks before the meeting of the society, which convenes in Milwaukee, Wis., Tuesday, August 26th.

We would most earnestly ask you to consider the foregoing.

J. U. LLOYD, Cincinnati,
GEO. W. SLOAN, Indianapolis,
W. W. BARTLETT, Boston,
Comm. on Papers and Queries.

Mr. Thomas J. Macmahan furnishes the following information as to rates from New York to Milwaukee on the occasion of the meeting of the N. R. D. A. and A. P. A. in August.

The rates from New York to Chicago will be $20 by the Pennsylvania or New York Central roads, and $18.50 by the Erie, West Shore, Baltimore and Ohio, or D., L. and W. roads. Return fare will be one-fourth the lowest unlimited rate (which is $20) by any of the pool roads. This will make the lowest round-trip fares $23.50. From Chicago to Milwaukee the fare is $2.75 by the Milwaukee and St. Paul road, and the return fare one-fifth that amount. A special car will leave New York by the Erie at 8 P.M., on Friday, the 22d of August. Parties desiring sleeping-berths should inclose $10 to Mr. Macmahan, at 142 Sixth avenue, to secure a section. This provides for two, and the holder of the section will have the choice of berths and can arrange later on to share the section with some one else, as there is little doubt that the car will be filled with delegates from New York.

From Boston, Mr. Colcord will take out a party of 25 or 30, via the Hoosac Tunnel route, at $30.50 for the round trip, exclusive of sleeping-accommodations.

New York.—The Governor has appointed, from the ten names presented by the N. Y. S. P. A., the following gentlemen to constitute the New York State Board of Pharmacy: Dr. Alfred B. Huested, Albany; Messrs. Edward S. Dawson, Jr., Syracuse; Hiram S. Haskin, Ithaca; J. Hungerford Smith, Ausable Forks; and Clark Z. Otis, Binghamton.

At the organization meeting of the New York City Board of Pharmacy, Professor P. W. Bedford was elected president, and Dr. Wm. Balser secretary, each for a term of three years. At the meeting for examination, June 25th, six candidates were examined, the following three being successful: Messrs. F. F. Sorgatz, William Friedrich, and Ernest Gebhardi. Examinations in the future will be held at the College of Pharmacy, 209–213 E. 23d street, New York, on the second Monday of the month, after September 8th, on which date the next meeting will take place. Applicants who furnish satisfactory evidence of having complied with the law may be registered by calling at the office of Dr. Balser, 218 E. 13th street, between 2 and 3 or 7 and 8 daily, Sundays excepted.

A regular meeting of the New York Druggists' Union was held at the College of Pharmacy, on Thursday, at 2.30 P.M. President Ditman presided and Mr. Schmid acted as secretary.

The calling of the roll showed about seventy-five members present.

Mr. Henry Schmid, of 38 Avenue A, was elected secretary, in place of Geo. Inness who resigned, some time since, for want of time.

A discussion arose as to the right of the Bureau of Combustibles to charge druggists $2 for a permit to carry certain goods known as combustibles.

Mr. Bendiner informed the meeting that every druggist in the city must apply for a permit, but that it was not necessary to pay any fee. (It has since been decided that the permit must be obtained and that the fee of $2 *must* be paid.)

Among the business transacted, a motion was passed indorsing the New York and Brooklyn Formulary.

At a meeting of the Executive Committee of the New York State Pharmaceutical Association held at Binghamton, on July 10th, it was decided that the date for holding the next annual meeting be changed to the third Tuesday in June, 1885, as on the date previously selected the hotels of Saratoga will not yet be opened.

The regular monthly meeting of the Queens County Pharmaceutical Association was held at Long Beach Hotel, on Thursday, July 17th.

The association has now on its roll thirty members. The next meeting will be held at Long Island City, on August 21st, at 3 P.M.

Rhode Island.—The regular quarterly meeting of the Rhode Island State Pharmaceutical Association was held at the Hotel Aquidneck, in the city of Newport, on Wednesday, July 2d, President W. H. Cotton occupying the chair, and Secretary Harvey I. Leith recording.

After the minutes of the previous meeting had been read and approved, President Cotton reviewed the progress of the association since its organization ten years ago with 29 members, it now numbering 132, an increase of 120 per cent during the past half-year, a result which must be particularly gratifying to all.

In compliance with the motion for the appointment of delegates to the American Pharmaceutical Association, which will convene at Milwaukee on Tuesday, August 26th, the President selected Messrs. Henry J. Alfrends, William B. Blanding and Harvey I. Leith. Mr. Walter Price, of Westerly, was then elected a member of the association.

Mr. Burdick, of Westerly, offered the following resolution, which was unanimously adopted:

Whereas, The practice of paying a percentage on prescriptions is demanded by the medical fraternity in some parts of the country:

Resolved, That the members of the R. I. S. P. A., believing that this practice is beneath the dignity of the pharmacist and unjust to the customer, will, under no circumstances, directly or indirectly, allow such percentage.

On motion, the secretary was ordered to invite the Rhode Island Medical Society to co-operate with them in putting this regulation in practice. The secretary was also requested to keep a list of unemployed assistant pharmacists, and on application to furnish registered pharmacists a copy thereof. By unanimous vote, Secretary H. I. Leith was made a life member and exempted from all dues.

It was moved that monthly instead of quarterly meetings be held at such places as the President may select. Motion carried.

Sundry bills were then allowed and ordered paid. The association then at 4.20 P.M. adjourned.

Among those present as guests were Prof. Edwin C. Calder, of Providence; Mr. P. W. Bedford, of New York; Prof. G. F. H. Markoe, Messrs. Henry Canning, and W. W. Bartlett, of Boston; J. W. Colcord, of Lynn, and J. Redfearn, of Fall River.

Washington, D. C.—The eleventh annual commencement exercises of the National College of Pharmacy took place on the evening of June 12th, at Lincoln Hall, Washington, D. C. The speakers of the evening were Professor E. T. Fristoe, who addressed in particular the graduating class, and President G. G. C. Simms, who conferred upon the graduates the degree of Phar. D. The members of the graduating class were: Edward R. Bigelow, Lewis Flemer, George J. Lockboehler, Laidler Mackall, and B. B. Owens.

Massachusetts.—A meeting of the pharmacists of the Northern section of Worcester County, Mass., was held in Fitchburg, May 5th, when a permanent organization was formed to be known as the Worcester North Druggists' Association. W. A. Macurda, of Fitchburg, was chosen President, Converse Ward, of Athol, Vice-President, and H. F. Rockwell, of Fitchburg, Secretary. A committee of three, consisting of H. A. Estabrook, of Fitchburg, E. E. Burdett, of Leominster, and F. W. Lord, of Athol, was chosen to draw up resolutions favoring the Campion plan, and to forward such to leading manufacturers of patent medicines.

At a special meeting, held June 16th, this committee made the following report:

Resolved, That we heartily indorse the Campion plan, and pledge ourselves to sustain the full retail prices fixed by those manufacturers who have adopted said plan, or who shall at any time hereafter adopt the same.

Resolved, That we will encourage the sales of all articles on the Campion list, to the exclusion, as far as possible, of the preparations of those manufacturers who are not disposed to enter into this popular arrangement for the protection of the retailer and for the mutual advantage of both.

Michigan.—The School of Pharmacy of the University of Michigan, at Ann Arbor, graduated the following lady and gentlemen at its commencement, on June 26th: C. W. Allmand, Edward Blum, W. H. Burke, E. E. Calkins, E. T. Case, C. L. Coffin, J. T. Conrad, W. H. Cooper, J. G. Craig, G. M. Cushing, W. E. Damon, G. V. Dawson, Miss Mattie Eaton, F. H. Frazee, L. H. Gardner, C. P. Godfrey, C. B. Harvey, W. B. Hoge, A. G. Hooper, Charles Hueber, C. N. Lake, G. W. Leaman, J. D. Meier, T. D. Pease, C. S. Peyton, Chas. Rübe, A. A. Schott, A. C. Schumacher, Channing Smith, H. W. Snow, W. E. Stevenson, W. I. St. John, F. A. Travis, A. T. Wagoner, R. M. Wetzel, E. L. Wilhite, W. C. Wyckoff.

Canada.—The annual meeting of the Quebec Pharmaceutical Association was held at Quebec June 10th. The

Treasurer's annual statement showed a balance on hand of $552.18. The President, in his address, reviewed the work of the year, and complimented the Society on its satisfactory condition. The following gentlemen were elected members of the Council:—Messrs. H. R. Gray, A. Manson, H. F. Jackson, Edmond Giroux, Sen., H. S. Evans, J. D. L. Ambrose, P. Mathie and F. C. Saunders. Messrs. J. A. Harte, S. Lachance, John Kerry and A. J. Covernton, who remain in office in accordance with the provisions of the Pharmacy Act, constitute, together with those elected as above, the Council for the current year. Messrs. H. S. Evans and S. Lachance were elected auditors. The Board of Examiners held an examination on June 9th and 10th. There were five major candidates, three minor, and two preliminary. The following were successful: Major—Hy. Vernier, Quebec, and Jules Hirtz, Montreal. Minor—A. E. Giguere, Quebec; T. Codene, Montreal, and Geo. Treggett, Quebec. Preliminary—M. Bouchard and Robert Webb.

New Jersey.—The druggists of Camden, N. J., are circulating for signatures a protest to the Common Council against the ordinance recently passed requiring the druggists to pay a license fee of $200 for the sale of liquor, whether sold for medicinal purposes or not. A few of the older druggists are in favor of the ordinance, but the majority are opposed to paying any fee.

The Camden, N. J., druggists have formed a permanent organization by electing A. P. Brown *President*, and Stanley G. Muschamp *Secretary* and *Treasurer*. Their constitution and by-laws are similar to those of the Philadelphia organization.

The Board of Pharmacy of the State of New Jersey held a special meeting Thursday, July 10th, at 480 Broad st., Newark. The following persons being graduates of pharmacy, were registered: Wm. H. Gifford, Bernard Ettinger, Henry L. I. Burmeister, Emlin Martin, Joseph Somerhoff, Ludwig Glaesser, Stephen D. Wooley. Eleven persons appeared for examination. The following six proving successful, received their certificates: Josia Hornblower, Jr., Benj. Monaghan, P. S. Wadsworth, W. E. Donough, Edwin Abrams, Frederick Klemiche.

The next regular meeting will be held at 480 Broad st., Newark, on Thursday, July 17th, 1884, at 11 A.M.

The annual meeting of the Board of Pharmacy of the State of New Jersey was held on Thursday, July 17th, 1884, at 481 Broad street, Newark. The following officers were elected to serve for one year: Chas. Holzhauer, Newark, *President;* Wm. R. Laird, Jersey City, *Treasurer;* G. A. Mangold, Trenton, *Secretary.*

Nine persons appeared for examination, and the following having passed satisfactorily received certificates: J. Howard Leggett; C. P. De Yoe, M.D.; J. L. Myers; J. C. Rush; W. E. Shuit; Andrew Burkhardt; Andrew B. Kirkpatrick, M.D. Mr. E. R. Petty, being a graduate of pharmacy, was registered.

Minnesota.—At the last meeting of the Southern Minnesota Pharmaceutical Association, held for the purpose of completing its organization, the following officers and committees were chosen:

F. A. Poole, Rochester, *President;* S. L. Crocker, Fairbault; L. G. Nelson, Kasson, *Vice-Presidents;* G. Hargesheimer, Rochester, *Secretary;* J. Grinnell, Kasson, *Treasurer;* L. G. Nelson, Kasson; George Weber, Rochester; Geo. H. Ely, Dodge Center; A. O. Heiberg, Rushford; A. Olson, Blooming Prairie, *Executive Committee;* James Barnett, Oronoco; J. G. Bush, Dover; W. W. Jewell, Pine Island, *Committee on Arbitration.*

The next annual meeting will be held on the second Tuesday in May, 1885. A meeting of the Executive Committee will be held at Rochester, Minn., August 19th.

Missouri.—The regular meeting of the Alumni Association of the St. Louis College of Pharmacy was held June 17th at the college rooms. President Bohm occupied the chair.

California.—A druggists' union has been organized by the retail druggists of Sonoma County, Cal., and a constitution and by-laws holding them to the strict observance of full prices on proprietary medicines and preparations, and to maintain a standard for all duplicates of physicians' prescriptions, have been adopted. A violation of this agreement will incur a forfeit of $25.

Wisconsin.—The Wisconsin Board of Pharmacy held a meeting at Fond du Lac, June 17th and 19th. There were eighteen applicants for examination. "Licentiate Certificates" were granted to W. B. Mitchell, Oconto; H. W. Mott, Oconto; A. K. Luckenbach, Oconto; T. L. Thomson, Jefferson; Ernst Geltch, Cedarburg; Chas. Szarzyuski, Milwaukee; F. A. Schuber, Beloit; H. B. Sears, Beaver Dam; W. G. Blair, Waukesha.

"Minor Certificates" were secured by H. T. Germond, Fond du Lac; O. E. Kills, River Falls; and Raphael Soquet, Green Bay.

The following certificate as Registered Pharmacist was also granted, to R. A. Loope, Black Creek. Certificates as Graduates were given to L. E. Brainard, Oconomowoc, and G. E. Nyeborg, Racine.

The Board will hold a meeting for examination at Madison, August 5th, the same time as the Association meeting, thus giving a chance to visit the Association and come for examination at the same time.

Illinois.—The fifth annual meeting of the Illinois Pharmaceutical Association will be held in the city of Bloomington, commencing September 30th. It promises to be the largest meeting ever held in the West. Manufacturers desiring to make displays should correspond with the local secretary, J. P. Espey.

Mr. Thomas Whitfield has been elected president of the Chicago College of Pharmacy. Professor Hays retires from the chair of Applied Chemistry.

The following officers were elected at the annual meeting of the Chicago Drug, Paint, and Oil Exchange: James R. Owen, *President;* Gorham B. Coffin, *Vice-president;* F. E. Pettett, *Secretary;* William Moseback, *Treasurer;* Thomas Lord, C. H. Cutler, E. W. Heath, P. Van Schaack, and L. A. Lange, *Directors.*

Kentucky.—The first commencement exercises of the Louisville School of Pharmacy for Women took place on July 1st. The graduates were: Miss Fauntine Vetter, Miss D. W. Marble, and Mr. R. T. Creason.

ITEMS.

The British Pharmacopœia Committee of the General Medical Council met on Friday, June 21st, to consider the additions and omissions which it is proposed to make in the next edition of the British Pharmacopœia. According to the *Medical Press and Circular*, it has been decided that the volume shall be published before the end of the present year.—*Pharm. Journ.*

Mr. E. Bremridge, for thirty years Secretary and Registrar of the Pharmaceutical Society of Great Britain, to whose zeal and fostering care a large portion of the success of the Society is mainly due, has been retired with an honorary life pension of £400, and his son, Mr. R. Bremridge, has been appointed in his place.

It is said of Sylvius that he ordered patients to drink from 150 to 200 cups of tea daily.

Armand Gautier has announced to the French Academy the production by him of xanthine synthetically.

Silvia Paveri, of Milan, recommends the use of tow in place of absorbent cotton, when prepared as follows: Boil for some time in a lye of wood-ashes or with a two-per-cent solution of caustic soda. Then wash repeatedly in water; after which bleach by immersion for several hours in a ten-per-cent solution of chloride of lime, stirring it occasionally. When it is perfectly white, wash thoroughly, dry, and card.

PHARMACEUTICAL CALENDAR.—AUGUST.

Additions to and Corrections of the following Calendar are solicited.

Date.	Society Meetings.	Date.	Society Meetings.
Friday 1st.	American Chem. Soc.—New York.	Thurs. 14th.	Maryland Col. Pharm.—Meet.
Mond. 4th.	Erie Co. (N. Y.) Pharm. Assoc. An. Meeting.—Buffalo.		New York Germ. Apoth. Soc.—Meet.
			Lancaster Co. (Pa.) Pharm. Assoc.—Meet.
Tues. 5th.	Wisconsin State Pharm. Assoc. An. Meeting.—Madison.		Albany Co. (N. Y.) Pharm Assoc.
		Tues. 19th.	St. Joseph (Mo.) Pharm. Assoc.—Meet.
	Wisconsin State Board of Pharm. Exam.—Madison.		St. Louis Col. of Pharm. Alumni Assoc.—M.
			Amer. Soc. of Microscopists.—Rochester, N.Y.
	Maryland Col. Pharm.—Meeting.		Executive Com. Southern Minn. R. D. A.—Rochester, Minn.
	Rhode Island Chem. and Drug. Assoc.—49 Weybosset St., Providence, at 8 P.M.	Thurs. 21st.	Queens Co. (N. Y.) Pharm. Assoc.—Long Island City, N. Y.
Wed. 6th.	Indianapolis (Ind.) Assoc. of Pharm.		
Thurs. 7th.	Hamilton County Assoc.—Noblesville, Ind.	Friday 22d.	Rhode Island Chem. and Drug. Assoc.
	Louisville (Ky.) Col. of Pharm.—Pharm. M.	Mon. 25th.	National Retail Drug Assoc. Annual Meet.—Milwaukee, Wis.
Tues. 12th.	National Col. of Pharm.—Washington, D. C.		
Wed. 13th.	North Carolina State Pharm. Assoc. An. M.—Charlotte.	Tues. 26th.	Boston (Mass.) Druggists' Assoc.—Meet.
			American Pharm. Assoc. An'l. M.—Milwaukee, Wis.
	Toledo (Ohio) Pharm. Assoc.		
Thurs. 14th.	Newark (N. J.) Pharm. Assoc.	Thurs. 28th.	Kings Co. (N. Y.) Board of Pharm.—Brookl'n.
	Philadelphia Col. Pharm.—Alumni Phar. M.		